

ALL HANDS



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JANUARY 1961

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ALL HANDS

THE BUREAU OF NAVAL PERSONNEL INFORMATION BULLETIN

JANUARY 1961

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TABLE OF CONTENTS

	Page
The Helicopter's Role	2
Navy New Year's Log	8
Dewey: Missile-Packing Frigate	10
—And Here's a Taste of Life on an Old Time Frigate	12
LSD Schoolhouse	13
Seabee Mobile Recovery Teams	14
Maintenance Crew	17
Space-Age Seabees Build TAGIS II	18
The Ship with a NERV	22
U.S. Navy Ships Pay Visit to Germany	24
Letters to the Editor	26
Special Feature	
What's the Right Time?	31
Centerspread: Time Chart of the World	32
Today's Navy	34
Servicescope: News of Other Services	42
The Word	44
Bulletin Board	46
What Do You Know about OC, AOC and NAOC?	46
When Did You Last Check Your Record of Emergency Data?	48
Naval Postgraduate School	51
Temporary and Reserve Officers May Request Transfer to USN	52
Directives in Brief	56
Book Supplement	
South Seas Adventure: 1838	58
Taffrail Talk	64

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• **FRONT COVER: LEAP FROGMAN** — Last member of a Navy underwater demolition team joins his fellow frogmen as he leaps into the water from a hovering helicopter during operations off the coast of Greenland.

• **AT LEFT: SNOWY WELCOME** — Cruisemen on board USS Northampton (CLC 1) get ready for good times ashore as Norwegian tug moves the CLC into position at pier in Oslo.

• **CREDITS:** All photographs published in ALL HANDS are official Department of Defense photos unless otherwise designated.



THE HELICOPTER'S

THINK OF THE word helicopter and you probably envision an aircraft that can rise straight up, hover in a fixed position, land in a small space and do a couple of other things not done by ordinary aircraft.

And that, perhaps, is really about the size of it. The copter (or chopper, whirlybird, or eggbeater) can do all those things.

Copters are not only versatile in their flying ability. They also have

WHIRLYBIRD pilot has a word with crew member before taking to the air.



many uses. In the Fleet today they carry out antisubmarine warfare duties and general utility duties of many types. They are even turning to in a minesweeping role.

These duties point to another aspect of helicopters. More and more ships are carrying them on a regular, full-time basis. At present 15 types of ships are in this category. Copters are carried by all active service cruisers and aircraft carriers, by amphibious force flagships, amphibious assault ships and by some dock landing ships and tank landing ships. They are quite often seen aboard icebreakers, surveying ships, cable-laying ships and aviation supply ships. As the DASH (Drone Anti Submarine Helicopter) system progresses, destroyers and destroyer tenders are being equipped to handle helicopters.

IT'S NOT THE SIMPLEST thing in the world for a ship to handle helicopters. At first it would seem a mere matter of clearing away a topside area for a makeshift flight deck, and of setting aside a few bunks and lockers for the copter detachment. More than that is needed, however. Provisions have to be made for stowing the H/C when not in use, and for fueling, servicing and repairing it.

With the ever-increasing use of

copters in the Fleet, more and more Navymen are learning what veteran copter-men have long known: The copter can do many things that are quite impossible for propeller-driven airplanes. Here are some of those specialties:

- Vertical or high-angle take-off and landing.
- Hover (or remain in a fixed, airborne position).
- Sideward flight.
- Rearward flight.
- Flying in small square patterns and small figure-eight patterns.
- Turn on a spot.
- Backward take-off.

Some of these evolutions may sound like mere fancy flying-circus stuff—but they all have their uses. The copter pilot can thoroughly cover small sectors of sea or land by flying in square patterns or figure-eight patterns. Also while searching, he can make a full sweep of the compass while remaining in a fixed position by turns on a spot.

A backward take-off is valuable when a shipboard chopper faces an array of masts, stacks and antennas. Rather than risk trying to clear those hazards on a forward or even a vertical take-off, the pilot merely eases his copter off the deck and away from danger in a backward take-off.

ALL HANDS

The same situation applies on land when his copter faces a cliff, trees or a large building.

A COPTER PILOT is a busy man. His aircraft needs constant control. The blades of the H/C's main rotor serve as wings, in a sense. They give the machine its vertical and horizontal motion.

The helicopter's vertical lift is controlled by varying the pitch of the main rotor, each rotor blade acting as a wing. The rotors revolve at a fairly constant speed and the amount of lift is controlled by adjusting the pitch of the blades. The pilot does this through his *collective pitch control lever* which gives the copter its vertical lift and helps to keep it aloft.

There is also the *cyclic pitch control*. This changes the pitch of each blade at certain points of the rotor's

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cycle of revolution. For forward flight the pilot uses his cyclic to cause the blades to take a larger bite of air during the after part of the revolution. The result is that the rotor (viewed as a disk) rises aft and lowers forward. In other words, the plane of the rotor is tilted. Since there already exists a vertical lift, when a tilt is applied to that lift, forward motion is the result. It is for this reason a copter is always tilted toward the direction in which it is

SEA TAXI—Helicopter's versatility makes it a jack-of-many-trades while at sea.

flying. Thus, a helicopter in forward flight appears to be flying nose down.

Through the use of the cyclic the pilot can also give his aircraft side-ward flight or backward flight.

AT THE TAIL of many H/Cs is a tail rotor. It is mounted on a horizontal shaft—in contrast to the vertical shaft mounting of the main rotor.

One purpose of the tail rotor is to change the copter's heading. Its main purpose, though, is to provide an anti-torque effect. The turning of the helicopter's engine produces a torque—which is taken up by the fuselage. The fuselage then tends to spin around.

The tail rotor serves to offset the spin. Should a copter suffer a cas-

TEAM MATES—Copters are an important part of Navy's sub hunting team. Here, an HSS listens with sonar gear.





WATER BIRD—Amphibious HSS-2 copter with all-weather capabilities is powered by two turbines and has ability to seek out and destroy subs.

uality to its tail rotor the whole aircraft will soon start spinning rapidly—a most gulp-making situation.

Some copters have two main rotors. Turning in opposite directions, they cancel out the torque effect. This does away with the need for a tail rotor. Its place is often taken by a tail plane, which provides added stability.

Auto-rotation provides a special



LIFE SAVERS—Supported by hoist from copter, an airman is guided into copter during sea-air rescue.

safety feature of helicopters. In normal powered flight, air is drawn downward through the rotor system. Auto-rotation, however, reverses the airflow with the air flowing upward through the rotor. Through the use of a free-wheeling device in the transmission system, the rotor is disengaged from a dead engine—and the spinning rotor slows down the descent of a disabled copter. Skilled pilots can set their whirlybirds down to a feather-mattress landing with or without engine power over a suitable landing area.

THE NAVY RECEIVED its first production-line helicopters in 1945. Though some progress was made during the following few years, it was not until the Korean action of 1950-54 that the copter had a good chance to show what it could really do. More and more jobs have been assigned to it. At the present time it carries out its duties under the four major headings: ASW, minesweeping, general utility, and vertical envelopment.

Antisubmarine Warfare Helicopters

—A key member of the HUK (hunter killer) team, the copter is equipped not only to detect a submarine but also to destroy it. The submarine is detected both visually and by means of sonar. For detection by sonar, a sonar ball is lowered by a cable from the copter into the water.

After detecting the target, the copter can destroy it with torpedoes or depth charges. Or it could call in other air-surface units to destroy it.

The fact that the H/C is itself airborne makes it almost invulnerable to attack from the submarine.

Mainstays of the ASW copters are those of the HSS series. Of this series, the HSS-2 is the latest. This aircraft mounts a five-bladed rotor driven by two gas turbine engines, each rated at 1050 shaft horsepower. The fuselage is 54 feet, 9 inches in length and the blades are nearly 19 feet above ground level. On an ASW mission it would carry a crew of four: Pilot, co-pilot, sonar operator and relief sonar operator. Its top speed at sea level is 138 knots, and it can climb at the rate of 1800 feet per minute. In an emergency it can take off or land on the water.

There are eleven HELANTISUBRONs in the Navy. Six squadrons are in the Atlantic Fleet, five in the Pacific.

Minesweeping Helicopters—These have been working with minesweeping surface units since early in the Korean fighting. At first it was pretty much a matter of the copter's crew spotting the submerged mines and then directing the minesweepers to the location. Later, the concept of a copter as a flying minesweeper received more and more attention.

That's the way it works at present. A ship-type minesweeper streams its gear and proceeds. The copter then makes a parallel-course approach and hooks onto the sweeping gear, which at the same time is released by the minesweeper. With the gear in tow—and for the greater part submerged and in a position to sever mines from their moorings—the copter then moves along, flying several feet above the track to be swept.

The copter's gear is spread out in a "V." To sweep wider areas, surface sweepers proceed on a parallel course, keeping just inside one of the legs of the "V." The lead position of a group of water-borne sweepers is the dangerous spot, for normally there is nothing to protect the lead sweeper should a mine be in the ship's path. But the coptermen need not worry about a submerged mine in their copter's path. They simply fly right over it and cut it from its moorings.

After the mine floats to the surface it is destroyed by gunfire.

General utility helicopters—The Navy has three HELUTRONs (Helicopter Utility Squadrons). Several detachments comprise each squadron. These detachments, which are

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not permanent organizations, are widely deployed. In one recent period, for example, busy **HELUTRON One** (based at Ream Field, Imperial Beach, Calif.) had detachments aboard four attack aircraft carriers, three icebreakers, one surveying ship, one MSTS transport and one Fleet oiler. Of its 13 detachments, only three were at the home field.

Just before that period, one of the squadron's outfits (9-60) had been operating in Korean waters. It consisted of a LTJG, an AD1, an AT2 and two ANs. In less than one month, 9-60 undertook the following details: Mine reconnaissance for Mine Flotilla One, radar calibrations and assisting a downed P5M that had lost one engine.

The performance of that tiny outfit gives a hint of the variety of tasks of general utility H/Cs. They transport personnel, mail and light cargo from one ship to another; haul personnel, mail and light cargo to locations in the Arctic or Antarctic; carry tons of delicate instruments into otherwise inaccessible areas of mountain regions for hydrographic purposes; search for leads in the ice for icebreakers.

Search and rescue is another role for Navy copters.

To many persons the main job of a helicopter is one in which the H/C takes a position astern of an aircraft carrier during flight operations, ready to rescue a downed pilot. This was one of the very earliest duties of Navy copters and it is still one of their most common tasks. As plane guard, a chopper is known, understandably enough, as the duty angel. The task of the duty angel's pilot is becoming more difficult with every advance made in pilot ejection. Instead of staying with an about-to-ditch airplane, pilots are more likely to eject. As a result, the downed pilot will most likely be farther away from the plane guard station than if he had remained in his airplane. He is also smaller and harder to spot. Consequently the copter's pilot has to take a longer time to spot him and to get to him.

Present day task forces reach from horizon to horizon and often beyond. This dispersion brings another aspect of the helicopter into focus. It is the sole physical link between ships of a dispersed task force. Copters have taken on many of the jobs that in pre-H/C days were done only with a highline transfer—the transfer of



ON DECK—Antisubmarine warfare carrier **USS Bennington (CVS 20)** makes a hard right turn as copters stand by on flight deck during operations at sea.

personnel, mail and light cargo.

Rounding out the general utility tasks is litter evacuation.

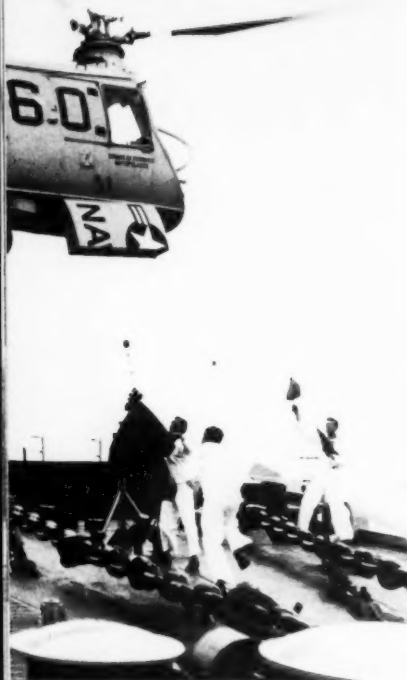
Utility copters carry the "U" in their designation. Operational "U" copters are the HUK, HUP, HUS and HUL. Though it is basically a training H/C, as indicated by the "T," the HTL also does general util-

ity work, much of it in connection with icebreaker operations.

Vertical Envelopment Helicopters—Vertical envelopment and vertical replenishment are made possible only through the use of helicopters. Here is an up-and-over way of making an assault landing, and of supporting the landing, which the U.S.

BEHIND THE ROTORS—Crew checks copter aboard **USS Northampton (CLC 1)**.





MAIL CALL—Welcome sight for Navy-men on the seas is a whirlybird flying to ship bringing news from home.

Marines pioneered. Though the pilot and passengers are, in the main, Marines, the ships from which they operate are manned by Navymen. Termed amphibious assault ships (LPHs) there are three of these ships now in commission: *uss Boxer* (LPH 4), *uss Thetis Bay* (LPH 6) and *uss Princeton* (LPH 5). Two more are being built: *Iwo Jima*

(LPH 2) and *Okinawa* (LPH 3).

While the others are converted support aircraft carriers, *Iwo Jima* and *Okinawa* are being built from the keel up as LPHs. They have been designed around that very special type of aircraft known as the helicopter.

VARIATIONS ON A THEME—A helicopter is one of a type of aircraft known as *rotorcraft*. Another is the autogyro, which was popular in the 1930s. The autogyro quite often has fixed (though stubby) wings and receives its forward motion from a nose-mounted propeller or wing-mounted propellers. Though the autogyro is distinguished by a main rotor that greatly resembles the copter's main rotor, there is one large difference. The autogyro's main rotor is entirely free wheeling; not connected to a power drive. The autogyro does not take off vertically. Instead, it needs a running take-off, much like that of a conventional airplane. After the autogyro gets speed the rotor starts spinning. Lift comes primarily from the spin.

The success and versatility of the helicopter have pointed to the possibilities of other related areas. These are rotorcraft of the VTOL or STOL type—that is, Vertical (or Short) Take Off and Landing. There are two families under the VTOL/STOL heading. One is the "tail sitter," of which the XFV-1 and XFY-1 *Pogo* planes of the mid-1950s are the prime examples. A tail sitter looks much like a winged rocket sitting on

its tail. A set of counter-rotating propellers in its nose give it its thrust. The pilot climbs a ladder, enters the cockpit and lies back. He makes a vertical take-off and after he reaches the desired height noses his plane over into normal horizontal flight. His landing is made in a similar but reverse manner.

IN CONTRAST to the tail sitters are VTOL/STOL aircraft of various sorts that might be considered *convertiplanes*. The use of oversize propellers or rotors is common to all of these.

The picture looks good for three types of these aircraft. One is of the *ducted fan type*. Here an encased multi-blade rotor is mounted within—or at the end of—each wing. By means of a gear-and-shaft device, the entire ducted fan can be tilted forward or skyward. In the latter position it can make a take-off or landing. When the pilot swings the ducted fan into the forward position, the aircraft assumes a normal type forward flight.

Next is the *tilt wing type*. In this, the rotors remain fixed to the wing. The wing itself pivots on the main fuselage. Then there is the *deflected slipstream type*. Its rotors are mounted in the usual position for a two-engine airplane, on the forward part of the wing. Aft of each engine, however, is an extremely large deflector or flap to deflect the slipstream downward. This is something like a sailing ship that is powered by its own wind-making machine.

WELCOME ABOARD—HUP from *USS Forrestal* (CVA 59) settles on fantail of *USS Northampton* (CLC 1) with guest.



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SNOW BIRD—A helicopter from USS *Glacier* (AGB 4) rests on Antarctic ice while Navymen explore polar region.

NAVY PLANNERS are also interested in yet another development in the H/C field, the *compound helicopter*. Essentially, this is a copter-like aircraft that still retains the main rotor, drops the tail rotor and adds conventional type engines and propellers in the normal two-engine biplane position. Since the engines must be far enough away from the fuselage for the propellers to rotate freely, they are mounted on the wings.

Like present type H/Cs, the compound helicopters can take off vertically (or nearly so) and then shift over to forward flight. After reaching shift height, the compound H/C's rotor gears become disengaged and the rotor starts free wheeling on its own, with the propellers giving the forward motion. Here is a throwback to the autogyro idea, with the free-spinning rotor adding to the lift.

It is easy to see that the idea of vertical take-off and short take-off flight has many applications. Long before the days of the Wright brothers, curious and intelligent men were aware of this, drawing designs or building models of pre-helicopters. The efforts along the lines of the helicopter were, in fact, greater than those along the lines of the conventional prop-driven airplane.

However, the impact of the Wright brothers' demonstration of the possibility of power-driven flight with their type of fixed-wing airplane

changed the whole course of development. With the prospects of prop-driven flight so bright, and with the numerous advances along those lines in the next few decades, helicopter development came to a halt. In short, aeronautical leaders were so busy developing the airplane that they didn't go along with the copter types. But the idea was always there.

In the 1880s, Thomas Edison experimented with a vertical rising device driven by an electric motor. He

concluded that no helicopter would be able to fly until someone came up with a more efficient engine.

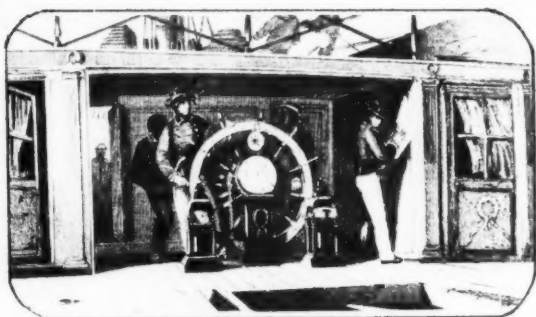
Later he predicted: "Whatever progress the airplane might make, the helicopter will come to be taken up by the advanced students of aeronautics."

If Tom Edison could take a short cruise in the Navy today, he'd realize that he was as good a prognosticator as inventor.

— Wm. J. Miller, JOCM, USN

NEW HOME—Helicopters have now joined the destroyer forces. USS *Hazelwood* (DD 531) is first of a group converted to handle remote control copters.





NAVY NEWS

EACH YEAR on New Year's Eve the OOD with the 0000 to 0400 watch is encouraged by Navy tradition to write his log in verse. Yet he is also bound by Navy regulation to enter certain information in the log. To combine the two is difficult. Usually a log entry is "for official

USS Wedderburn (DD 684)
*This watch, says tradition, must all
 be in rhyme,
 We're thankful, however, it's only
 one time.
 Once again it's New Year's on ye
 olde Wedderburn,
 And I stand the midwatch
 because it's my turn.
 NRF, San Diego, in Berth 24,
 Port side to Pier Two, we're
 moored as before.*

*Standard mooring lines doubled
 and a wire out aft,
 A security watch roaming
 and checking on draft.
 'Longside to starboard: Duncan,
 Henderson, Kidd;
 Arriving later than we, they still
 moored as we did.
 There are many ships here from
 our Western Fleet;
 The Pacific Reserve also,
 mothballed and neat.*

*All of our services come from the
 pier,
 They bring water and power —
 but no New Year's cheer.
 COMFIRSTFLT is SOPA at N.A.S.,
 His forces are ready and eager
 for test.
 The ship's all snug in condition
 YOKE,
 As the watch greets the New
 Year with coffee and coke.
 —ENS Wayne N. Raugh, USN*

USS Compton (DD 705)
*Home from her travels, the
 Compton now rests
 At Pier One, Newport, in a
 five-vessel nest.
 'Twixt Gainard and Benham in
 Berth 144,
 You'll find the old Compton
 quite standardly moored.*

*At the pier is the Dickson, then
 comes the Davis,
 Then Gainard and Compton —
 what a berthing they
 gave us!
 While other Atlantic Fleet units
 lie near,
 District and harbor craft also
 live here.
 Our SOPA, COMDESLANT, is
 Admiral Taylor,
 Who's responsible here for many
 a sailor.
 His home's the Yosemite — a fine
 ship is she —
 She tends all the DD's and
 rare goes to sea.
 As for us, we have Number Four
 Boiler in use;
 Number Two has been given a
 jolly good boost.*

*Condition of readiness IV has
 been set,
 And Baker as well, so no one
 gets wet.
 Our One and Two Generators are
 currently on,
 And only a fraction of the crew
 is now gone.
 Why all the readiness? The
 reason's a beauty;
 The Compton has earned the
 (blank) ready duty.
 —LTJG J. E. Moore, USNR*

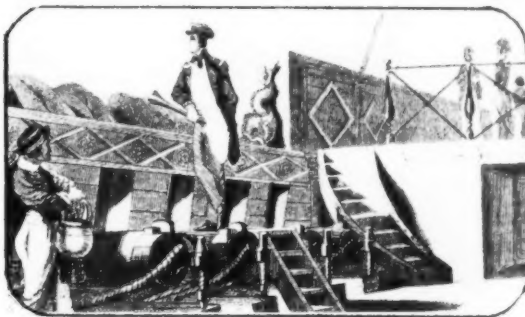
USS Forrest Royal (DD 872)
*I had just relieved the watch, still
 rubbing my eyes,
 When I witnessed a ceremony
 that was quite a surprise.
 A brash young babe came
 charging aboard,
 "Where's the man I relieve?",
 the young lad roared.
 A bearded old figure, beaten and
 worn,*

*Stepped out of the shadows to
 greet the new-born.
 "You are relieved, old man, be
 on your way,
 You have made history and had
 your say."
 "Attention, youngster," the old
 gent warned,
 "You'll not relieve as soon as
 you're born.
 There is information you'll need
 to know,
 Running the world's not a
 one-man show.
 Help you must have to get
 started right,
 So I'll have my say, then fade
 into the night.*

*This ship we are on is one
 of the best,
 She is now in Newport for a
 well earned rest.
 She has served me well, as she
 surely will you.
 Berth Two-forty-five, we're here
 in Pier Two.
 Boiler Two is going, Generator
 One gives us power,
 And the security watch is
 reporting each hour.
 Condition Yoke is set, standard
 lines are secure,
 The barometer holds steady,
 weather's cold and clear.*

*She's in a nest of six ships,
 of old DESRON Ten —
 The type squadron you need if
 you're going to win.
 It's the Sherman, the Abbot, the
 Robert and Roan,
 Then the Royal and Hunt in
 the order just shown.
 The ships present are many as
 you can see,
 We have used them all to keep
 the world free.*

WEAR'S LOG



use only." However, it has become almost traditional for some of the entries to be published.

Here are excerpts from a few New Year's Eve entries that have been sent to us in the past. We don't say they are the best ones to be written, but they are typical.

COMDESLANT's the big boss, he's
running this show,
And SOPA is quartered in
the Yo-Yo."

The old man straightened, said
"I stand relieved."

The young man had sobered,
listened, believed.

—ENS B. L. Sample, USN

USS St. Paul (CA 73)

'Tis not enough to write the log

In routine, orderly prose,

Tradition states that it shall rhyme
As any mariner knows.

For this is such a special night

For the mighty Fighting Saint,

Moored starboard side to Berth 34

Half shorn of her powder and
paint.

She's undergoing overhaul

In Long Beach, southern Cal.,

A normally proud and gleaming
ship,

She's embarrassed like any gal

To know she's not in fighting trim,

No guns, no fuel, no steam,

But very soon the day will come

When once again she'll gleam.

She's moored with standard

mooring lines

Which are doubled all around,

The one-and-five-eighths-inch ropes

On bow and stern are sound.

Another mighty cruiser

Is moored to port tonight,

Bremerton is her fighting name,

Her Christmas lights all bright.

Her mooring lines are standard too,

And doubled like the Saint's;

A breasted line amidships

Helps stop her from mixing

paints

With other mighty ships close by,

Whose names we list with pride.

Toledo, with COMCRUDIV One,

Is resting on the tide.

Los Angeles is here tonight,

Another cruiser true,

COMCRUDIV Five adorns her mast

With his stars of white on blue.

The Hornet should be mentioned

here,

Another famous ship,

Rochester too is down the way,

Just back from a short sea trip.

Units of the Pacific Fleet,

In various shapes and forms,

Along with many district craft

Are here to hear the horns

That mark the birth of a bright

new year

And shatter the peaceful sleep,

Of thousands of people everywhere

Who know that we will keep

The peace and quiet of many such

nights

Carefree and fun for all,

By sending our ships throughout

the world

On a critical moment's call.

Condition of readiness IV is set —

This merely means we're ready

For anything that may arise —

Our watch is taut and steady.

Condition X-Ray's set, of course,

For every hatch and door.

Senior officer present afloat

Is COMINPAC ashore.

—LTJG C. P. Willis, USN

USS Mansfield (DD 728)

Like it's New Year's Day already,
man,

But here we sit, tight on
this can.

We make it with lines, six-inch
the size,

On Pier Six — us and two
other guys.

Sixty-two-and-a-half is the berth

It's real gone, far off this earth.
Now here's the setup; We're hip
to hip

Next to a cat, that Larson ship.

From the pier to the left,

here's how it goes:

Turner Joy, Larson, then our

side shows.

DD Nine-fifty-one, the first,

is real neat.

But Eight-three-oh, a little

more beat.

The mooring lines — like they're
all doubled.

A wire forward, like man,
no trouble.

The whole bit's being run from
the shore,

They give us the stuff —
juice and more.

Now the show is cast in Long
Beach, Jack,

We make the shipyard, we're
in that pack.

Course there's others on the
scene, Dad —

Big ones, small ones, they dig
this pad.

The Hornet's here — the

Toledo's beat —

A swinging group, this
Pacific Fleet.

COMINPAC is king o' the hill

He's top-billed in this metal mill.

But the king, too, has left the hive.

So to the bag, I'm hardly alive.

—ENS A. R. Battaglini, USN

This should give you an idea of
how a traditional New Year's Eve
log is written. If you were the lucky
one who caught the first watch of
1961 and you tried your hand at
this sort of thing, we'd be pleased
to receive a copy for possible future
use.—ED.



HEADED FOR THE FLEET—Raising of national ensign on stern of USS Dewey signified the new Terrier-packing DLG was in commission and ready for sea.

Dewey: Missile-Packing

FIRST-COMMISSIONED of the 10-ship group of *Farragut*-class guided missile frigates is *uss Dewey* (DLG 14), named after Admiral of the Navy George Dewey, hero of Manila Bay.

Old-timers, accustomed to the living conditions to be found in older

type destroyers, will be inclined to shake their heads in disbelief as they tour the ship. Here are some of the things they will find:

Full-size lockers are integral with the bunks. They contain enough stowage space to accommodate the contents of the largest seabag of

each crew member. Bunks are arranged in tiers of three, and have foam-rubber mattresses. Partitions section off each tier, offering more privacy than usual. Each bunk has its own reading light.

Air-conditioning maintains an even temperature practically throughout the ship. Even the engineroom has not been overlooked. It has a centrally located air-conditioned operating station. The messing compartment is decorated with mounted photographs on the bulkhead and a variety of artificial plants. The portholes have drapes, and each mess table is covered with a checkered tablecloth.

Galley equipment includes automatic ice cream machines, improved bakery shops and ice machines.

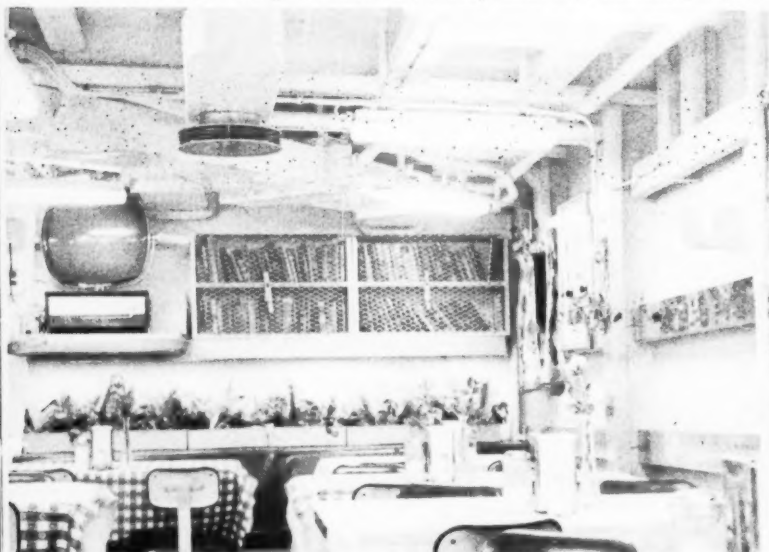
Dewey's bridge is fully enclosed. The accent is on visibility, which provides added efficiency and comfort for all topside watchstanders.

The new destroyer leader can

start, stop, turn or change speeds with completely automated boiler operation.

Dewey is the first ship built from the keel up to fire guided missiles. Her twin launchers handle *Terrier* missiles, which are capable of destroying aircraft traveling at super-

THIS IS A SHIP?—Living on board USS Dewey (DLG 14) is the most, as photos of crew's mess and bunk clearly show.



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sonic speeds and at altitudes above those reached by conventional gun systems.

Missiles are selected from below-deck magazines and placed upon a launcher which is trained, elevated and fired automatically. The operations are directed from a weapons control station on the lower level of *Dewey's* split-level combat information center.

The surface-to-air *Terrier*, weighing approximately 3000 pounds, is propelled by a two-stage solid fuel rocket motor. It is guided in flight by a radar beam sent out from the ship.

Backing up the missiles are five automatic rapid-fire guns: a 5-inch/54 and two twin 3-inch/50's. The latter have the advantage of each being on a separate fire control system, allowing for greater mobility in tracking and firing on targets.

This ship has the latest radars and can detect targets more than 200

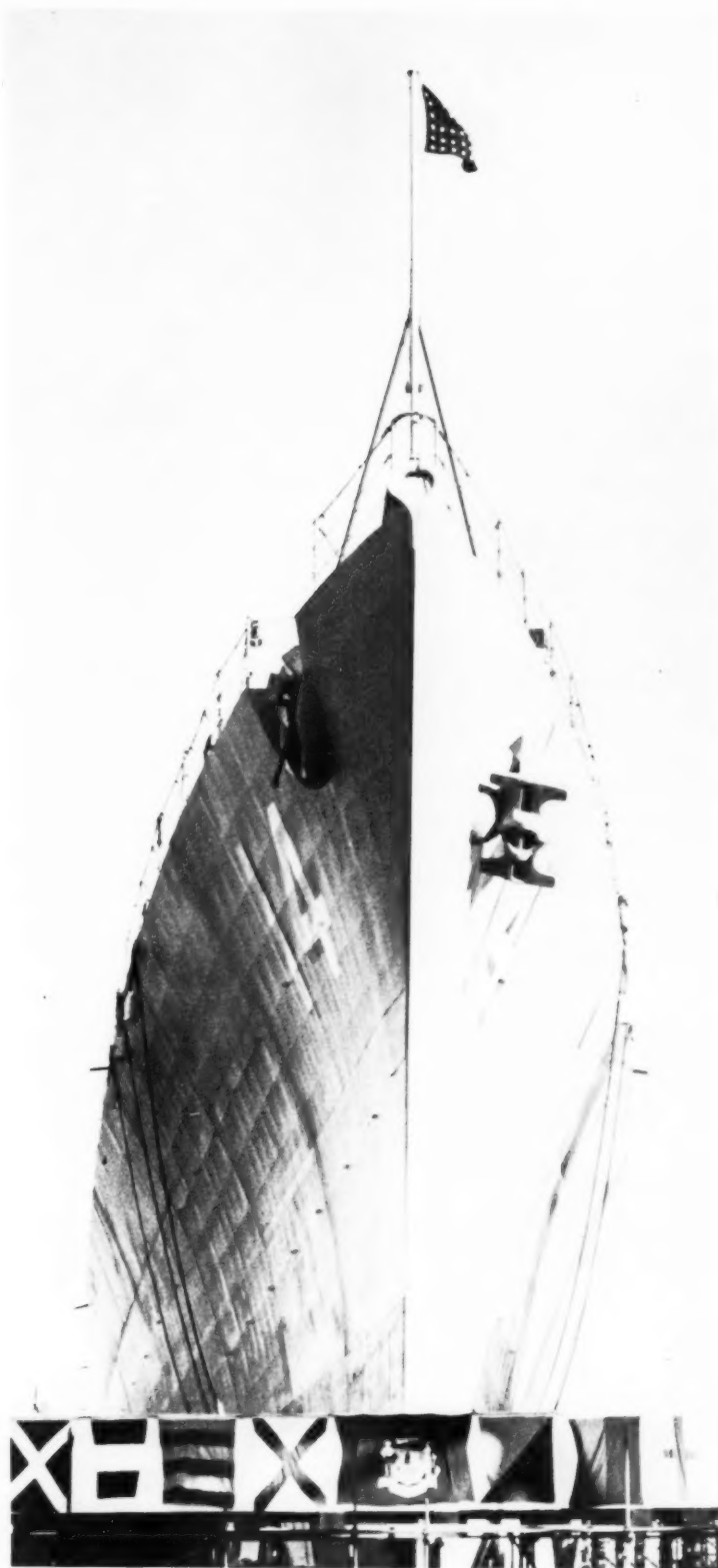
nfrigate

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Terrier
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miles distant. As the target closes, a special tracking radar determines its range, azimuth and altitude.

By flipping a switch on *Dewey's* closed-circuit TV, the CO and conning officer can obtain a continuous picture of the summary plotting board in the combat information

show. **DEWEY** stands high at launching.





FRIGATE MEETS FRIGATE—Guided missile frigate USS Preble (DLG 15) moored in Norfolk, Va., at the same pier with first frigate, USS Norfolk (DL 1).

center. They can thus obtain a view of all air and surface targets held by radar. The same TV also serves the weapons control in the lower

level of the combat information center.

Dewey's main antisubmarine weapon is *Asroc*, a rocket-propelled

acoustic homing torpedo. The eight-round launcher is mounted on the bow. Its nickname is "the coffin," which it somewhat resembles.

Also included in Dewey's ASW equipment are a pair of triple-tube torpedo mounts installed on the main deck. Antisubmarine homing torpedoes are fired from the triple tubes.

Increased speed and maneuverability are the result of Dewey's light superstructure—375 tons. The use of steel would have caused it to weigh more than 1000 tons.

Dewey's high bow is a contributing factor to stability in handling. At high speeds the effect of bow waves is greatly lessened. The difference is quite noticeable.

Dewey is scheduled to join her sister ships of Destroyer Squadron 24 in February. With all her features, it's a safe bet that lots of Navymen will be coming aboard for a first-hand look at one of the most modern ships in the Navy.

—And Here's a Taste of Life in an Old Time Frigate

Everyday living on such modern ships as Dewey offers quite a contrast to that of the sailing Navy. Here is a report of a young recruit, Charles Nordhuff, of 1844, telling of the shipboard sleeping and eating facilities of that time.

I HAD READ of sailors sleeping in hammocks, but had before this no proper or definite idea of what might be the shape of that most necessary article. As I was holding it in my hands, with a rather puzzled air, a sailor took me in charge.

We proceeded to the lower deck, where I was shown a number of hooks set into beams and carlings overhead. The little strings—clews they are called—were used to suspend the hammock between two of these hooks, thus making a swing-

ing bedstead, about four feet from the deck or floor. Into this bedstead were placed a rag-and-shaving mattress and dog's hair blankets, and the affair was pronounced ready.

"But," said I, "it swings." I was ashamed to confess that I was afraid to fall out of so unsteady a resting-place.

"Now let us see if you can jump in," was his only reply.

A match tub was brought for me to stand upon; then I was told to catch hold with my hands of two of the hooks, give my body a swing, and alight in the hammock.

Here I soon found that it was not a difficult matter to keep from falling out. I was next shown how to tie or "lash" it up.

It was now supper time, and the

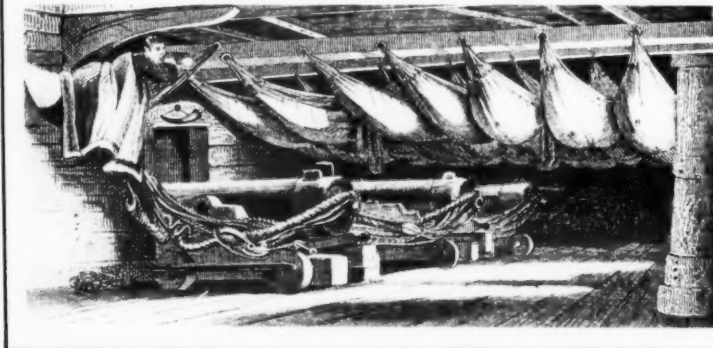
cook called "come and get your tea." I got my pot, pan and spoon, as the rest did, and proceeded to the "galley," where each individual was served with a quart of tea, ready sweetened, with which we betook ourselves to the mess, where, in a "mess chest," are kept the bread and meat, and whatever else may constitute the daily allowance of food.

Here the acting "cook of the mess" had set our supper out on a "mess cloth" on deck. It consisted of sea-bread, raw salt pork, cold boiled potatoes, and vinegar.

We gathered around the cloth, each one bringing his tea, and a seat, although some squatted right down on deck.

I waited patiently for my share until the rest were helped. One of the sailors seeing this, cut me a large side of fat salt pork, gave it a dip in the vinegar pan, and laying it on a cake of bread, handed it to me saying, "Eat hearty, my lad, and give the ship a good name."

I was quite willing to do so, but at sight of the raw meat which was being consumed on all sides of me, my appetite failed me, and I was content to eat a little bread and tea, and look on at the performance of the rest. I soon learned, however, to like sailors' prog.



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LVT IN LSD—Chinese Nationalist LVT maneuvers into its position in well deck of the USS Gunston Hall (LSD 5).

LSD Schoolhouse

The crew of the dock landing ship *USS Gunston Hall* (LSD 5) turned teacher for a spell recently, with *Gunston Hall* itself serving as the classroom.

A San Diego-based unit of Amphibious Squadron One, currently operating with the Seventh Fleet in the Far East, *Gunston Hall* spent a week at Tsoying, Formosa, training the Chinese Nationalist prospective crew slated to man the dock landing ship ex-*USS Whitemarsh*.

Whitemarsh was taken out of mothballs some time ago for transfer to the Republic of China under the U.S. Military Assistance Program. She is scheduled to be commissioned in the Chinese Nationalist Navy as the *ncs Tung Hai* (LSD 191.)

Officers and men of the prospective *Tung Hai* crew boarded *Gunston Hall* early each morning and left late in the afternoon during the week of intensive training.

Tung Hai's fledgling crew proved eager to learn, and the ability of many of them to speak and understand some English helped immensely in speeding up their training.

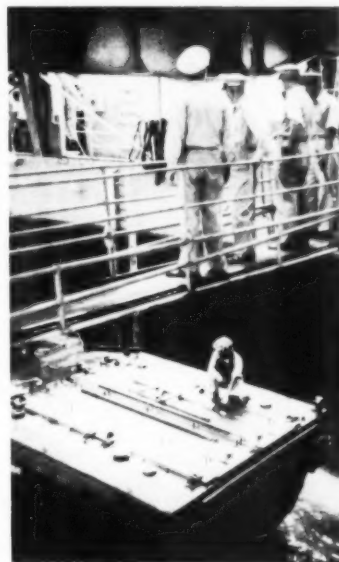
Once *Gunston Hall* crew members had demonstrated the proper steps in flooding of the well deck, and in the control and handling of landing craft entering and leaving the "dock," their Chinese counterparts were ready to take over.

Some of them, formed into teams, manned radio circuits and the signal station used to control movement of landing craft into and out of the dock. Others, members of the deck force, practiced handling of lines, and the positioning and gripping down of landing craft inside the dock. Chinese engineering personnel

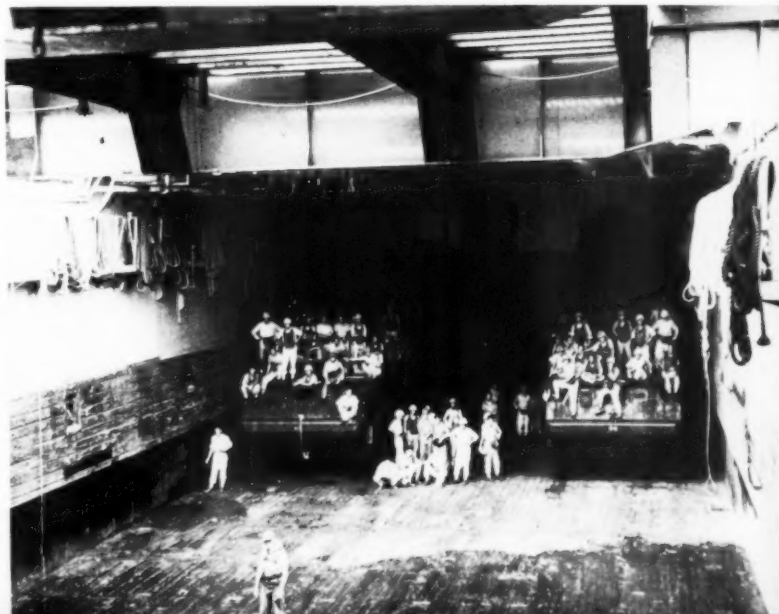
learned the operation and maintenance of all of the machinery involved.

A close feeling of camaraderie and mutual respect sprang up between the two groups of Navymen during their week together. And the Nationalist Chinese were both impressed with, and grateful for, the thorough training they had received—so much so that at week's end Captain Wang Ting Chih, prospective CO of *Tung Hai*, presented *Gunston Hall* with a plaque.

Inscribed in Chinese, it reads:
"To Officers and crew of the
USS Gunston Hall (LSD 5)
The pattern for our ship
Presented by
Commanding Officer T. C. Wang and
All Hands of *ncs Tung Hai*
(LSD 191)



LEARNING—Chinese officers observe from catwalk. Below: LVTs and crews.





SEABEE gets into his protective gear to survey the area of the blast.

being taken under a program developed by the Bureau of Yards and Docks. Essentially, BuDocks envisions that the Civil Engineer and associated Group VIII personnel have the basic capabilities, background and equipment resources to form the nucleus of the base recovery forces needed in the event of nuclear disaster. Our present Mobile Construction Battalions, backed up by the 9,000 organized Reserves, can be prepared to respond, in the event of nuclear attack or other emergency, with action similar to that of the fire department of a large American city.

Selected battalion personnel are being given education and specialized training to mold them into highly efficient and equipped mobile "crisis crews" in complete readiness to move to the scene of disaster and

Seabee Mobile Recovery

NUCLEAR-AGE SEABEES are to have another role. Under a program recently started, the construction specialists who proved their ability to fight as well as build during World War II are now undergoing training which will fit them as Mobile Recovery Task Forces. Their function will be to handle operations vital to recovery either from large-scale enemy attack or isolated peacetime accidents of a nuclear nature.

In World War II, Seabee battalions set the stage for our fighting

forces by building and maintaining overseas base facilities, and when necessary, taking up arms in their own defense. In the cold war world, where possible nuclear attack or nuclear accident may demand all the skills we can muster, present day Group VIII personnel will be readied to move in on the scene of the emergency—equipped and trained to carry on operations of recovery, rescue, demolition, firefighting, decontamination and repair.

The first necessary steps are now

carry out emergency recovery operations.

Such forces will materially assist in keeping the naval shore establishment operating and ready to service the Fleet in a general war of a nuclear nature. Even in peacetime, the ever-present hazard of accident to nuclear weapons or nuclear reactors demands the presence of trained and skilled task forces to cope with the aftermath of such eventualities.

BuDocks has prepared and equipped five aluminum trailers to

DANGER ZONES are recorded and marked off by CB team as secondary explosion occurs in a nearby building.



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serve as mobile classrooms for training the recovery task forces. Each carries equipment for 80 trainees and has a tractor-truck prime mover with a special six-man cab for the instructor crew.

A cadre of 34 active Group VIII personnel has been selected to serve as instructors. Prior to assuming instructor status, selected personnel have received specialized training by attendance at the five-week course in Atomic, Biological and Chemical Warfare Defense at Fort McClellan, Ala., and a four-week course at the Instructor School, Norfolk, Va., or San Diego, Calif.

Group VIII graduates of the Fort Belvoir Nuclear Reactor School form the nucleus of the instructor group.

Two trainers have been assigned to Construction Battalion Center, Port Hueneme, Calif. One is providing instruction to the MCBs and active duty Reserves. The other is touring West Coast states providing

weekend training exercises to Seabee Reserve divisions at their various locations.

Three trainers have been assigned to CBC Davisville, R.I., because of the larger number of Reserve divisions located in the eastern and southern states. One trainer will provide instruction to the MCBs while in home port, including active duty Reserves, while the other two are providing training at Construction Battalion Reserve division locations.

Here is a typical four-week course at a Seabee center. The trainers permanently assigned to the centers are staffed by nine- or 10-men instructor groups and provide a four-week course in the following subjects:

First week: Course orientation, introduction to atomic warfare defense, effect of nuclear explosions, detection and monitoring (radiological), introduction to Chemical Warfare, self-survival, decontamination, gas mask drill, and a field exercise.

Second week: Advance training in monitoring and detection, advance training in individual and group protection, engineers elements organization, decontamination—AW, BW and CW, advance training in chemical and biological agents, control procedures, rescue operations, demo-



WRAPPED UP—Teammate seals off sleeves with tape for added protection.

lition and fire fighting, utility repair, and disposal of contaminated waste.

Third and fourth weeks: Radioactive decay, effects and output of nuclear weapons, effects of radiation on personnel, detection and monitoring, individual and group protection, requirement for shelters and their utilization, management of mass casualties, decontamination, field exercise, reactor incidents, target analysis, recovery organization and operational readiness.

The only difference between the courses given to active Group VIII personnel, as contrasted to Reserves, is the portion covering nuclear accidents. In the event of a national emergency Reserves will receive this type of training.

Nuclear Accidents—Accidents to plutonium-bearing weapons may occur as a result of fire, shock or other means while in storage or transit, resulting in destruction or detonation.

In an HE explosion, plutonium will probably be scattered as small bits of shrapnel-like metal. It is also possible that a small fraction of the plutonium may be oxidized and distributed along with the smoke and dust of the explosion. The fineness of the oxide particles permits them to be airborne or resuspended with resultant deposit over large areas. Plutonium oxide has practically no decay in time (half life: 24,300 years). Personnel hazard is principally from inhalation or ingestion.

Present responsibility for handling

peacetime nuclear weapon or reactor accidents is assigned to district commandants. However, to provide expert consultant services to local recovery forces, two "plucon teams" (plutonium control) are maintained—one at Indian Head, Md., and one at San Francisco, Calif. These groups are alerted whenever movement of a nuclear weapon is scheduled through their respective areas. The Mississippi River is the dividing line of the areas.

These plucon teams are largely composed of civilian personnel. Administratively, their civilian status raises many problems owing to the necessity of preparation for worldwide travel on military planes; the lack of funds to pay for overtime; and the irregular hours resulting from such alerts. BuDocks hopes

TRAILERS serve as classrooms to teach the Seabees the important job of cleaning up after atomic attack.





HOT JOB—Simulated atomic blast marks beginning of CB's recovery job.

eventually to replace these teams with Group VIII personnel after they have been adequately trained.

CBRD Weekend Exercises — Naval district commandants have been requested to notify commanding officers of Naval Reserve Seabee divisions of the date the trainer is scheduled to visit them, with a request to combine four nightly week drills into one weekend exercise of 16 hours.

Each mobile trainer is staffed by a five-man instructor crew, capable of providing instruction to 80 personnel at each exercise. Wherever possible, two or more divisions are being requested to participate in each exercise. Each trainer is equipped with

all material necessary for the exercise.

The novelty of the program conducted by the mobile trainers has captured local interest in each of the towns visited and has drawn requests for permission to participate from civil defense, fire and police officials in many towns. The sight of naval personnel demonstrating radiological and chemical warfare safety measures so far inland has amazed many local citizens.

Other Reserve Seabee units that have also participated in weekend exercises are divisions at: Boston, Fall River, Lawrence, Lynn, Pittsfield and Springfield, Mass.; Portsmouth and Manchester, N.H.; Ban-

gor, Maine; Burlington, Vt.; Bakersfield, China Lake and Port Huemene, Calif.; Las Vegas, Nev.; and Tucson, Ariz.

Training Active Seabees — Fifty men from each Mobile Construction Battalion are scheduled to attend the basic course while in home port before being deployed to new overseas locations. MCBs 3, 7 and 11 have already taken the course.

For reasons of economy, Amphibious Construction Battalions will receive their training at Little Creek, Va., and Coronado, Calif. The mobile trainers will conduct on-station exercises covering the four-week basic course modified to reflect the mission of the ACBs.

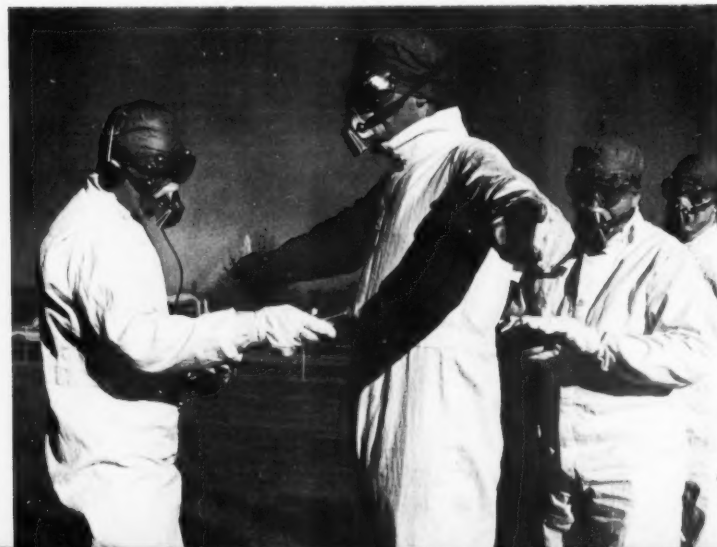
District Plucon Training — Starting January 1961 the mobile trainers will also take on the task of training Naval District Disaster Control Forces in the specialized skills required in the handling of areas contaminated as the result of nuclear accidents. All district forces required to respond to nuclear accidents will be given team training in the specialized functions for which they have been assigned responsibility. (Training will be fleet-type field exercises generally not given at naval schools.) This training will be given on weekdays in order not to interfere with the Reserve weekend schedules.

Another BuDocks objective includes that of expanding the mobile trainer program to provide on-station training to the naval shore establishment organized Disaster Control Forces. This latter organization is composed of approximately 114,000 personnel, mostly civilians.

Plans call for the development of cadre of Group VIII nuclear instructors by cycling personnel in the various nuclear duties. The cycle of training starts with the Base Recovery Training Program for one tour, followed by one tour at the Fort Belvoir Nuclear Reactor School and one to two years at the various locations of shore-based nuclear reactors before starting over again.

A new Seabee insignie, displayed on all sides of the trainer, indicates the new Seabee role. To the familiar "Bee" emblem has been added a gas mask, walkie-talkie, protective clothing, radiological detection equipment and radiation hazard sign. The insignie has a background of a partly demolished structure and the predominant color is "radiation purple."

—A. G. Gardner



TESTING—Members of team are monitored for radiation when job is done.

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GROUND WORK—B. J. Scopland, AD2, checks compressor rotor. Rt.: P. J. Ostendorf, ADJAN, uses ultrasonic cleaner.

Maintenance Crew

AT ANY NAVAL AIR STATION, maintenance is a big and important business. NAS Miramar, located just out of Los Angeles, Calif., is no exception.

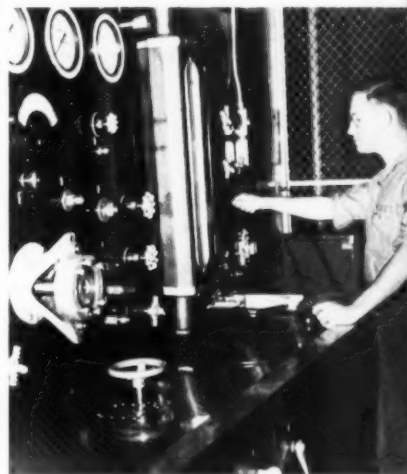
Miramar's Maintenance Department works closely with the squadrons and air groups at the station on an operational level, furnishing tools, equipment and even planes. Its jobs in keeping Navy wings in combat readiness are many. Since being decommissioned as a FASRON squadron last year, it has been doing an even bigger job. The addition of the component repair program results in up to 6000 parts repairs a year.

Another responsibility of Mainte-

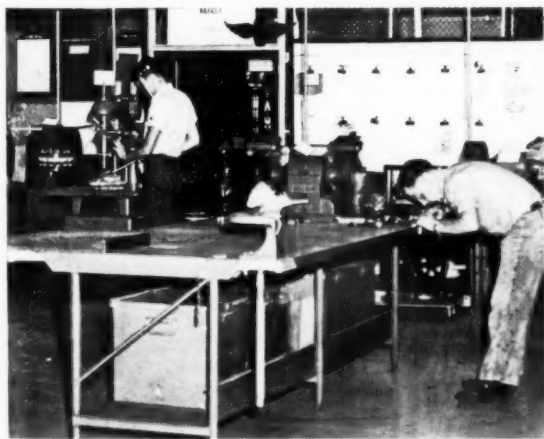
nance is a group of some 26 airplanes, about half of which are in a pool, as replacements for squadrons. This means that every major type of plane flown at the Naval Air Station must be kept on hand and there must be skilled Navymen on deck who know every part of each aircraft from engine to cockpit.

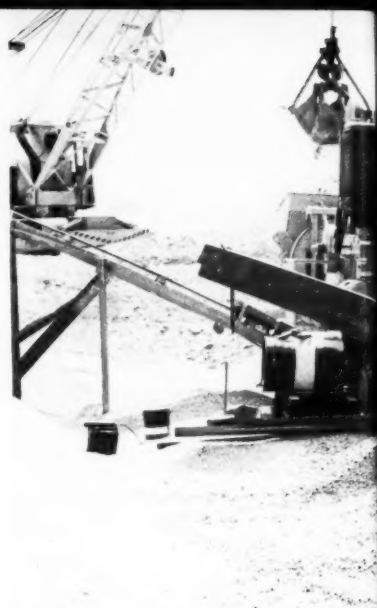
Maintenance spaces also include the parachute loft, oxygen service shop, tire build-up shop, and electronic facilities.

It all adds up to big business—the big business of keeping Pacific Fleet planes in the air for our nation's defense. They know how to do it.



SHOP TALK—Skilled hands work in airframes (Rt.), welding shops. Above: G. A. Leggett, AMH2, checks hydraulic line.





KEEPING TRACK—Seabee rigger works on radar tracking tower. Rf.: Coral is crushed to be used in making concrete.

Space-Age Seabees Build A

WITH THE COMPLETION of the Tracking and Ground Instrumentation Station (TAGIS) installation for the National Aeronautics and Space Administration (NASA) on tiny Canton Island in the South Pacific, the Seabees have now officially entered the space age.

The Seabee-built installation will be completed by 1961 when the United States expects to orbit a man-carrying spacecraft around the earth as part of Project Mercury.

TAGIS 11, as the island station will be known, is one of 17 Project Mercury TAGIS installations to be built. Their job will be to track the first man in space as he orbits around the earth. They will also receive and forward scientific data gathered by the space astronaut and by instruments in the satellite.

The Pacific Missile Range at Point Mugu, Calif., which will manage TAGIS 11, will receive teletype information from Canton Island as

well as from three other Down Range Stations in the Pacific (two in Australia and one in Hawaii). In turn, the data will be relayed to Project Mercury World Headquarters at Cape Canaveral, Fla.

The Canton Island NASA Project was quite a logistic challenge, even for the Seabees. Although the island was serviced by commercial airlines, there was no commercial shipping because of inadequate port facilities. And with Hawaii 2000 miles away and the United States 4500 miles away, the expense of airlifting men, supplies, equipment and machinery to the construction site would have been prohibitive.

In addition, there were no facilities for feeding and housing construction workers. The entire construction project would have to be self-sustaining. Every item concerned with the project, such as men, supplies, materials, food and shelter would have to be shipped to the island.

NAVAL MOBILE CONSTRUCTION BATTALION TEN (MCB-10) commanded by CDR N. L. Martinson, CEC, USN, was assigned the job.

This was somewhat of a surprise to MCB-10 men, because when they received their orders, they were at their home port—the U.S. Naval Construction Battalion Center at

LOADED FOR CANTON—MSTS transport, USNS Pvt. Frank J. Petrarca (T-AK 250) was taken out of mothballs to carry the materials to build the TAGIS.



ALL HANDS



concrete.



SKELETON WORK—Men of MCB-10 get things moved up. Below: Camp site looked like this in the early days.

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Port Hueneme, Calif.—awaiting assignment to the U.S. Naval Air Station, Agana, Guam, to continue work on a dependent housing project there.

Besides that, one group of men from MCB-10 — Detachment Alfa — was at the 1960 Winter Olympics at Squaw Valley, Calif., where they were building snow compacted roads and a huge parking lot.

Since the Alfa group was already on a job, the battalion CO created a second group of Seabees from his Battalion, designated Detachment Bravo, to undertake the Canton Island project. LTJG Jonathan C. Tibbitts, CEC, USN, was appointed to head the 80-man Canton detachment.

Working from estimates, MCB-10 selected men from the seven Seabee rates (builder, steelworker, surveyor, construction electrician, utilities man, equipment operator, and construction mechanic) as well as supporting rates such as commissaryman, yeoman, hospital corpsman and storekeeper, which would be necessary to operate independently on Canton Island.

Machinery and equipment to be installed at the TAGIS facility were assembled at Port Hueneme, which was the shipment point for the project.

More than 2500 items were col-



WELL DONE—Water for telemetry and control building was provided by digging this 25-foot-deep well that collected water seeping in from lagoon.



HANDS

JANUARY 1961

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WATER WORKS—Ocean water collected (at right) was distilled to furnish CB construction project with water.

lected. Equipment and supplies included such items as a water distillation plant, 4000 sacks of cement, construction equipment, steel rods, tons of food, tents, a galley, lumber and nails.

Probably the most important item on this list was the food, since none is grown on the island. The first shipment of food to Canton Island for the Seabees included enough fresh provisions to feed the 80 men for 45 days and enough dry

and canned food for the duration of the project. Additional fresh food was flown in from Hawaii.

A SEABEE BASE CAMP was included in the material gathered at Port Hueneme. It consisted of tents for living quarters, quonset huts for a galley and administration spaces, electrical generators, refrigeration equipment to store frozen and chilled food, and a fresh water distillation unit.

The material was shipped to Canton Island aboard the Military Sea Transportation Service ship USNS *Private Frank J. Petrarca* (T-AK 250) which was recently reactivated by MSTs. One group of Seabees assigned to the Canton Island project attended a cargo-handling course at the U.S. Naval Supply Center, Oakland, Calif., so they could off-load the ship when it reached Canton Island—there were no stevedores on the island to do the job.

Meanwhile, the men who would build the TAGIS installation on Canton were being organized. An advance party of two officers and 30 Seabees left Port Hueneme on 17 May 1960 and arrived at Canton aboard a special MATS flight the following day. USNS *Petrarca* also arrived on the same day. The Seabees wasted little time as they shed their dress whites in favor of the Seabee working green uniform and began to off-load the ship.

The men worked day and night,

with little rest, to unload *Petrarca*. D. A. Cummings, EO3, USN, for example, worked for 30 hours without rest during the early stages of off-loading. Other men worked nearly as long.

OTHER SEABEES began to build their camp site while the ship was being unloaded. They put up 23 tents for living spaces and erected quonset huts for the galley, administration buildings and supply warehouses. Tents also served as the detachment dispensary, heads, showers and laundry. Tents and quonsets were wired for electricity, supplied by Seabee-installed generators. Water distillation units were also installed to convert salt water to fresh.

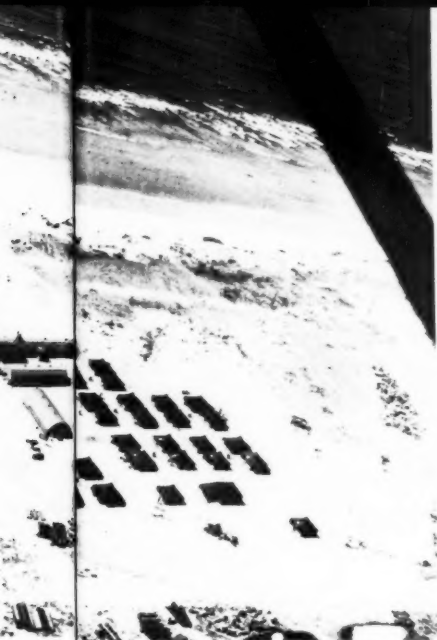
Inadequacy of stowage facilities was one of the first difficulties. There was no indoor stowage for electronic equipment and it was almost impossible to keep cement dry during a three-inch unseasonal rain which fell during the first week on Canton. The tarpaulins gave some protection, but not enough. The need for additional spare parts also became apparent when one of the generators broke down.

The rain finally stopped and the Seabees were able to begin work on the TAGIS installation. Surveying began on May 27 and the first ground was broken four days later.

The most important—and largest—building constructed at the installation was the Telemetry and Control

IRON LEGS—Work is begun on radar tower after off-loading on island.





CB TENT TOWN looked like this from the air. Right: Seabees work on part of the station's complex wiring system.

(TC) building. It will house most of the equipment used to track and communicate with the space vehicle and the astronaut. Located at the northwest end of an abandoned World War II fighter strip, the 40-by-100-foot air-conditioned building covers some 3400 square feet. It will house the communications, control and telemetry equipment in addition to the electronic maintenance and storage areas, toilet facilities and a fire detection system.

THE SEABEES CHANGED the skyline of the tiny island with several steel towers which were erected for special Project Mercury equipment. For example, a 90-foot Boresight Tower to be used to check the accuracy of the tracking station's radars went up, a 35-foot receiving antenna was built at the TC building, and two other 25-foot receiving antennas were constructed.

A 6000-gallon above-ground diesel oil storage tank has been installed to supply fuel for the generators, which are housed in a 20-by-64-foot arch-ribbed quonset. Three 100 kw generators will supply the primary power.

TAGIS technicians will live in six 20-by-56-foot quonset huts. Each consists of four bedrooms, a kitchen, a day room, hot water heater, and a clothes washer and dryer.

Originally, a 12-foot hole was to be blasted in the coral of the lagoon to provide water for the TC build-

ing. Seabee ingenuity found an easier way, however. Because the water table of the island is only three feet below the surface, they dug a 25-foot deep well at the edge of the lagoon. They lined the well with five-foot square concrete blocks. Coral was used as backfill to filter the water as it seeps into the well. A concrete slab was put over the top and two powerful suction pumps installed. The result was a pumping system that saved time and materials, and one that is more accessible

than the proposed lagoon excavation.

The majority of the construction work for TAGIS II has now been completed and the NASA electronic equipment has arrived on the island. The Seabees have spent more than 5000 man-days building the Canton Island TAGIS installation.

Now, some of these Seabees have returned home. Others have remained, however, to help install or relocate additional equipment. Final completion was set for December.

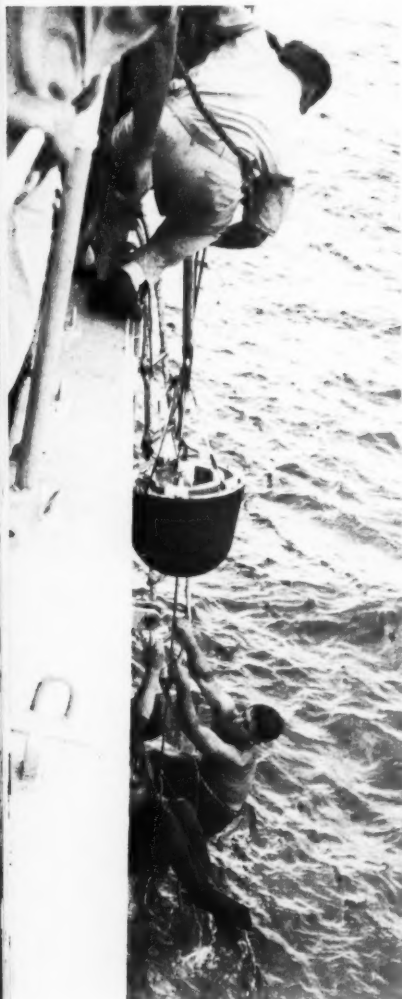
—Fred W. Doby, JO1, USN.

FINISHING TOUCHES are put on the missile-tracking station's radar towers.





NERV space capsule is shown in drawing. Below: Space 'traveler' is carefully eased aboard destroyer.



The Ship with

WHEN THE DESTROYER USS *Rowan* (DD 782) arrived back on the west coast the past fall she sported a homecoming pennant which told the world in large block letters that "ROWAN BRINGS HOME THE BACON." It wasn't really bacon, though — it was an 80-pound package of NERV.

That's not a misspelling either — NERV was the conveniently shortened nickname for a Nuclear Emulsion Recovery Vehicle, and *Rowan* was returning from a highly successful bit of "outfielding" in the Pacific Missile Range.

It all started when the National Aeronautics and Space Administration launched its first space experiment from the Naval Missile Facility at Point Arguello, Calif. An *Argo* D-8 rocket boosted an instrument-laden payload into space and sent it winging some 1320 miles out into the Pacific.

The 83.6-pound nose cone contained instruments designed to record vital information about the inner Van Allen Radiation Belt — to provide such data, for example, as the effect of radiation upon a nuclear emulsion, and the effect of the impact of small meteorites upon the payload's highly polished outer shell.

The three-ship task group charged with the recovery of NERV shoved off from San Diego a week before the scheduled shoot. Besides *Rowan*

there were the attack transport *Paul Revere* (APA 248) and the destroyer *Gurke* (DD 783). All are units of the West Coast-based First Fleet.

NERV'S ESTIMATED IMPACT AREA, code-named "Point Zulu," was a section of ocean about 1500 miles south-southwest of San Diego, about midway between Acapulco, Mexico, and Hawaii.

As it neared that point the task group conducted a dress rehearsal, using a dummy nose cone containing a radio beacon. After the capsule had been placed in the sea the three ships made runs around it to evaluate their beacon receiving equipment, and to indoctrinate their crews in making visual sightings of a small floating package. A PMR WV-2 radar dome-equipped aircraft flew over the ships, vectoring them to the location of the cone, just as it was expected to do during the actual recovery attempt.

Heavy fog blanketed Point Zulu at sun-up the day before the launch, but the sun burned it off within an hour. This information was relayed back to Point Arguello, where it was decided to postpone the next morning's originally scheduled 0730 firing for one hour.

That afternoon *Rowan* and her companions deployed into their recovery positions. *Gurke* took station six miles north of Point Zulu, *Rowan* 62 miles east, and *Paul Revere* 30 miles west-southwest. Then a final communications check between the ships revealed that as they steamed farther apart to reach their stations, the assigned frequency for voice radio communication was becoming unsuitable. A new frequency was selected, enabling the task group to maintain good voice contact.

THE COUNTDOWN BEGAN that night back at Point Arguello. Dawn found the weather situation around Point Zulu overcast with rain squalls, but in spite of this the countdown was continued. Then, just 45 minutes before launching, there was a "hold." Gloom spread throughout the ships' crews at the news, but spirits perked up moments later when it was learned that the hold was a temporary one, caused by a radio message

SHARP TEAMWORK of recovery ships and plane located nose cone in Pacific.



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from PMR that the capsule would be five minutes late in arriving at the impact area.

Finally, at 0835, NERV was blasted into space, and word went out to the task group that the rest was up to them.

Aboard *Rowan*, Gurke and Paul Revere, all hands not engaged in essential work were ordered topside for lookout duty. However, at 0842 PMR headquarters reported that the probable reentry point would be some 100 miles from that previously estimated. All ships got underway immediately.

Wind and weather data were fed into PMR's computers, which came up with a new estimated point of impact. The computers also gave 0902 as the capsule's reentry time, with its parachute blossoming three minutes later.

PRECISELY AT 0905 reports of radar contacts with the partially metallic parachute began pouring into Paul Revere's control room. All three ships reported contacts, with *Rowan* closest, 60-plus miles away. A few minutes later the WV-2, carrying the on-scene commander, reported it was directly over the capsule's radio beacon, but couldn't see it because of the weather. *Roman* plotted the plane's position, and estimated she



OUTFIELDER—USS *Rowan* (DD 782) was the nearest to missile's impact area.

could arrive at its location by 1115.

The WV-2 continued to circle over the area, and, as the fog cleared, its crew spotted a dye marker in the sea. On the next pass the capsule was sighted, and smoke flares were dropped.

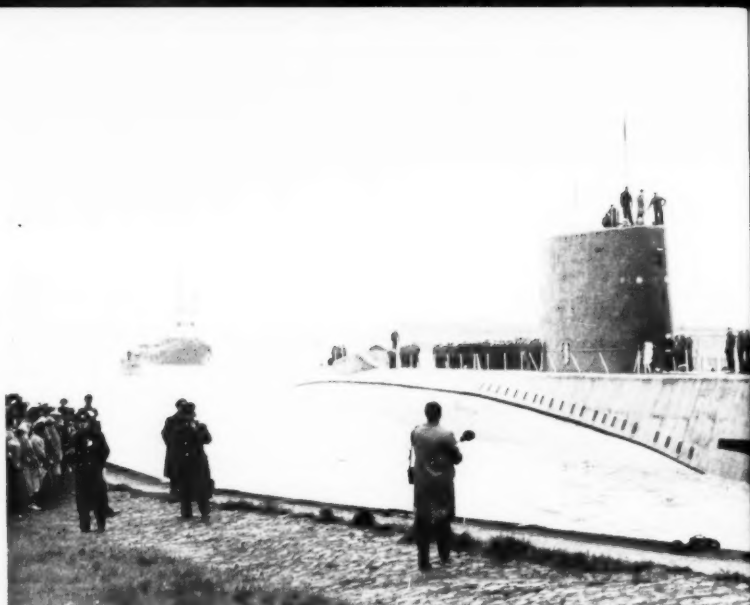
At 1108 *Rowan* had the nose cone in sight, and was alongside it 14 minutes later. Crewmen D. A. Slusser and H. J. Kornder leaped into the sea and fastened lines to the bobbing capsule, and at 1123 *Rowan* was able to message NASA officials that the "bacon" was aboard.

PRIZE PACKAGE—Capsule is handled carefully. Rt.: Argo rocket is readied.





SUPER SUB is eased into North Loch at Bremerhaven. Below: Triton men study German posters while in town.



GREETINGS—German sailors and civilians welcome USS Triton, SSR(N) 586.

U.S. Navy Ships Pay Visit

WHEN USS Triton, SSR(N) 586, arrived at Bremerhaven, Germany, a couple of firsts went into the books. It was the first visit to Germany of a nuclear-powered submarine. It was the first time a submarine of any kind had visited Bremerhaven since World War II.

Upon arriving, Triton entered North Lock—where a crowd of 15,000 got a close but brief look at the 447-foot ship. Within an hour Triton shifted berth to the port's North Harbor. It was a remote area where all water traffic had been blocked off.

In the further interests of security, German navy frogmen kept a round-the-clock guard on the big radar

picket submarine. They made periodic underwater checks of the piers and the nearby waters. Spectators were able to view the ship from a distant road and an elevated sea wall, however.

On the third day of her week-long visit, Triton was joined by USS Cromwell (DE 1014). Crew members of Triton and Cromwell made daily tours to Bremen, where they took in the sights of that large north German city. Among the special events for the enlisted men of both ships were a dance sponsored by the Federal German Navy and a party put on by Army Special Services.

Triton and Cromwell were but two of the seven ships that visited

TRITON SUBMARINERS look over sweaters in store while touring Bremerhaven.



N) 586.

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A FIRST—A-sub visits Bremerhaven.

German ports following NATO man-
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uss *Macon* (CA 132) put in at
Kiel for a Wednesday-to-Monday
stay. En route to Kiel she became
one of the first U.S. Navy heavy
cruisers to enter the Baltic Sea
since pre-war days.

Visitors to Hamburg were uss
Antares (AKS 33), *Severn* (AO 61)
and *Fiske* (DDR 842).

A week-long visit to Cuxhaven
was made by uss *Truckee* (AO 147).

Except for *Triton*, each of the
ships was open for general visiting
by the German public. *Triton* was
open for limited visiting.

—H. George Baker, JOCS, USN.

SIGHTSEEING Navymen tour city.



IN THE MILL—U.S. Navymen visit windmill in German city. Below: German
sailors chat with nuclear sub's crew members and a local cop points the way.



LETTERS TO THE EDITOR

AD Designator

SIR: If I remember correctly, ALL HANDS magazine published an article a few years ago which explained how BuPers selected abbreviations for the enlisted rating structure.

I am currently stationed with the U.S. Air Force, and I am constantly asked what certain rating abbreviations stand for. Most of them are easy, but when I'm asked about the "D" in the aviation machinist's mate (AD) rating, I have no answer and I have been unable to find one.

Can you explain it?—F.S., Jr., PN1, USN.

• The "D" in AD has no particular significance.

In 1947, when the rating structure was revised, the designators for all the general service ratings were converted to two-letter abbreviations. This was done mainly to make the designators easier to handle with machine accounting methods.

If the abbreviation AM had been assigned to the aviation machinist's mate rating (which was then abbreviated AMM), it would have been necessary to change the designator of the old aviation metalsmith rating (now aviation structural mechanic) to something else. As a result of this conflict of letter designation, aviation metalsmith remained AM, and another letter had to be used for the aviation machinist's mates. "D" was probably selected because it didn't conflict with any other

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rating.

Whenever possible, the rating designator was designed to reflect an approximate abbreviation of the name of the rating, but, as you can see, it wasn't always possible.

Even now, the Navy occasionally has the same problem. Back in 1953 when the guided missileman rating was established, for example, GM would have been the appropriate designator. This was impossible, of course, since that abbreviation already belonged to the gunner's mates. "S" was selected in this case and guided missilemen became GS.—Ed.

Query on NESEP

SIR: I am interested in the Navy Enlisted Scientific Education Program (NESEP), but would first like to know what type of duty I could expect as a mathematician or as a psychologist. Also, would a successful candidate's first assignment be as a general line ensign, or would he go directly into his chosen field?

Another point I am not clear on is whether or not the three or four years spent in college under this program would count for longevity, and if I would be able to choose my own major in this program.

Can you answer these questions for me?—J.T.R., USN.

• Happy to help out. The NESEP offers unusual opportunities to anyone who can qualify under BuPers Inst. 1510.69E.

Under the NESEP you would fill general duty assignments as a mathematician or as a psychologist. Your initial assignment, therefore, would be as a general duty ensign.

While you are attending college, your time will count toward longevity, and you may be able to choose your own major. The available majors are listed in BuPers Inst. 1510.69E, but your choice must be approved by the Chief of Naval Personnel after you have been interviewed and have taken an examination.—Ed.

1,700,000 Messages to Garcia

SIR: Although we can't find figures to substantiate our claim, we here at the Major Relay Center, Naval Communications Facility, Japan, think we have established a record for tape relay communications continuity.

We have handled 1,704,350 messages without a known non-delivery. This, to the best of our knowledge, is a record.—A.E.C., CWO, USN.

• You have set a record that will stand at least a month—that is, until our next issue. We frankly have no idea whether you have a legitimate record or not in regard to non-deliveries, but we feel fairly sure that it will not be allowed to stand unchallenged.—Ed.

Right Picture, Wrong Caption

SIR: I read carefully the excellent article about hydrofoils entitled "Meet the Grasshopper Ships" in the October 1960 issue of your magazine. On page nine, however, I found that the captions for the upper and lower pictures depicting Halobates and Sea Legs were reversed.

This mistake may not have been detected by casual readers since both boats are submerged foil types. However, to Navymen who have worked with hydrofoils, it may lead to confusion.—Captain J. J. Stillwell, USN.

• Fortunately we have sharp-eyed as well as casual readers. Many thanks for catching this one, and we hope the wrongly captioned pictures don't cause any serious confusion.—Ed.

Pro-Pay for Recruiters?

SIR: I started to draw pro-pay (P-1) in January 1961 and it was to remain in effect until July 1961, unless revoked for cause.

I have now received orders to recruiting duty and I have been told that my pro-pay will stop when I leave my present duty station. Is this info correct?—R.D.P., SMC, USN.

• Right. Pro-pay must be revoked if you are transferred to any primary duty which does not require the skill on which pro-pay was originally based. In your case, since you are going to recruiting duty, your primary job will not be that of a signalman. Full information can be found in BuPers Inst. 1430.12B.

Recruiters draw pro-pay, but it is based on a special recruiter's exam. You must serve on recruiting duty for six months to qualify.—Ed.

Pro-Pay for How Long?

SIR: I was awarded proficiency pay (P-1) in January 1960, which was to run for 12 months.

As a result of the February 1960 examinations, however, I was advanced to PO1. At that time, E-6 personnel were drawing pro-pay for 18 months.

My question is this: May I now draw pro-pay for the extra six months, or will my pro-pay end six months before another test is given?—K.R.T., LI1, USN.

• You may draw pro-pay for the extra six months. The letter from the Naval Examining Center which authorized your advancement to E-6 also authorized your commanding officer to extend your proficiency pay until 15 Jul 1961.—Ed.

Nuclear Reactor Welder

SIR: I've been looking through the *Navy Classification Manual* (NP 15105A), and I notice that there is now listed a classification for Nuclear Reactor Welder—SF 4946.

As a graduate of Class "C" Welder's School, I am very much interested in entering this field if at all possible. Any information you could give me regarding assignment to the program, schooling available, etc., would be appreciated.—C.B., SFC, USN.

• At present, training in nuclear power plant welding is provided through a 19-week course at the U.S. Naval Shipyard, Portsmouth, N.H., and another course is also being given at Mare Island, Calif. Navymen scheduled for assignment to submarine tenders or submarine bases have been receiving priority consideration in requests for such training.

Future plans call for the course to be conducted at the U.S. Naval School, Welding, San Diego. It is recommended that you submit a request for the school, and express a desire for assignment to a sub repair activity.—Ed.

Picking Works Like a Beaver

SIR: USS *Picking* (DD 685) has the finest engineering gang in the Pacific Fleet Destroyer Force, and we can prove it. Our ship has won the Engineering "E" four consecutive years — a Pacific Fleet Destroyer Force first, we think.

The Engineering Department, under the direction of LTJG Richard A. Wedemeyer, ENS Harry H. Andrews and Harold G. Thomas, BTC, has won with a 17-year-old ship. To win once is an accomplishment, but four times in a row is unprecedented in DESPAC.

Picking was first commissioned in 1943 and assigned to the Pacific Fleet as flagship for Destroyer Squadron 49. She participated in the bombardment of the Japanese home territory, and then joined the Seventh Fleet for the Philippine campaign. *Picking* claims to be the first U.S. Navy ship to fire into Corregidor. She also took part in the Okinawa campaign and, by the end of the war, when she was decommissioned, *Picking* had won five battle stars.

On 26 Jan 1951, *Picking* was recommissioned at Long Beach, Calif., and moved to the Atlantic Fleet Destroyer Force for duty. In April 1953, she was reassigned to the Pacific Fleet for the Korean campaign. She returned to Newport after Korea via Hong Kong, Singapore, Ceylon, the Suez Canal, Izmir, Naples, Cannes, Gibraltar and Argentina, to complete a round-the-world cruise.

Picking then operated in the Atlantic until March 1956 when she was shifted to the Pacific Fleet and made a part of Destroyer Squadron 23, the "Little Beaver" squadron of World War II



LEARNING THE ROPES—Young visitor aboard a destroyer in San Francisco gets a look at Navy handiwork with hemp line by two boatswain's mates.

fame. *Picking* is still a "Little Beaver."

Although we are now undergoing overhaul in the Long Beach Naval Shipyard, we'll be ready for competition very soon.—CDR J. M. Mason, USN.

• If you accomplished all this before the overhaul, you should really go when you get back into action. Good luck this year; hope you make it five.—Ed.

Witness to DD Form 93

SIR: Article B-2312(3) of the *BuPers Manual*—which discusses the Record of Emergency Data (DD Form 93-1)—states in part: "The person witnessing the signature of the service person executing the form, shall sign his name in this space on the original and the copy."

Submarine School

SIR: I would like to attend conventional Submarine School, but I have been unable to find out what qualifications are required. I don't even know if men in my rate—machinist's mate second class—are eligible. Where can I find this information?—C.B.A., MM2, USN.

• Chapter 10, Article 10.1 of the "Enlisted Transfer Manual" has all the facts about the Submarine School. Machinist's mates (MM3 through MMC and designated MM strikers) are among those eligible to attend.

MMs are wanted for submarine duty because of the need for them in the nuclear power program. The eligibility requirements for them to go to Submarine School are the same as the requirements for Nuclear Power School.—Ed.

May the witness be an enlisted man? —L.F.S., PN1, USN.

• Yes, he may. The article is interpreted as referring to the person, either officer or enlisted, assigned responsibility by the CO for interviewing the designator.

Or putting it another way, the witnessing person in the execution of a Form DD 93-1 may be of any rank or rate provided his job (assigned by the CO or through the chain of command) or position requires him to witness the signature of the designator.—Ed.

Standard Transfer Orders

SIR: Must a copy of enlisted Standard Transfer Orders be forwarded to the Bureau of Naval Personnel when a man reports to his ultimate duty station?

Article C-5402 of the *BuPers Manual* states that a copy of officers' orders should be forwarded, but does not mention enlisted orders. Yet the *Transfer Manual* (NavPers 15,909), Chapter 23, Article 23.1(h) states that a copy of enlisted Standard Transfer Orders must be sent to the Bureau if it was the basis for the issuance of transportation requests or meal tickets.

I say individual copies of enlisted STOs should not be forwarded to the Bureau except as indicated in the above paragraph. Am I right?—D.E.N., PN2, USN.

• You are correct. Except as required by the "Transfer Manual," enlisted STOs should not be sent to BuPers. Previously, copies of enlisted orders were placed in the individual's service jacket at the Bureau, but this is no longer required.—Ed.

LETTERS TO THE EDITOR (Cont.)

Promotion of Reserve WOs

SIR: A selection board convened in BuPers recently reviewed the records of all USN Warrant Officers for possible promotion to LDO(T) rank. My question: Has there been or will there be a similar board to review inactive Reserve Warrant Officers who were "phased out" late in 1959?

I have in mind a CHSUPCLK, USNR, who went to inactive duty in December 1959, along with many other Reserve Warrant Officers. If he were offered a commission, would it be possible for him to request an active duty contract?—J.F.D., PNC, USN.

• There is no LDO program for Naval Reservists. One which closely parallels the LDO program, however, is the Reserve Integration Program, discussed in detail in BuPers Inst. 1120.26B.

Briefly, the Reserve Integration Program provides a path to the grade of Ensign, USNR, for CWOs, WOs, CPOs and PO1s. To be eligible they must have been members of or associated with a drilling Reserve unit in a pay or non-pay status for at least one year as of July first of the year in which application is made. Officers appointed under this program are assigned designators 1106, 1356, 3106 or 5106, as appropriate.

The first selection board to consider applicants for this program is tentatively scheduled to convene early in April 1961. It will automatically consider, without applications from individuals concerned, all WOs who are attached to drilling Reserve units. Selectees will be appointed LT, LTJG or Ensign—the rank to which appointed dependent upon length of service as a

Examination Questions

SIR: A few issues back in ALL HANDS I read that questions on Navy mail would be included in the examinations for yeomen during the August 1960 exams.

What is the word on Navy mail questions for yeomen during the February 1961 exams?—L.R.D., YN1, USN.

• Questions concerning Navy mail will not be included in the February 1961 yeoman examinations.—Ed.

Warrant Officer. This will be a one-shot consideration — future applicants will have to meet eligibility requirements contained in the appropriate BuPers instruction in effect at the time of application.

Purpose of the Reserve Integration Program is to provide a pool of officers who may be called upon to serve during a national emergency. At present there are no plans to allow these officers to serve on active duty except during such an emergency.—Ed.

Navy 'E' Worn on the Uniform

SIR: This ship had been awarded gunnery "E's" for all mounts and directors. Then it won the engineering "E" and finally it won the efficiency "E." Uniform Regs covers the wearing of the efficiency "E" but not the gunnery "E" or engineering "E."

Do members of gun crews already awarded the gunnery "E" wear another "E" for the battle efficiency competition? Can engineering and damage control personnel wear both the engineering "E" and the efficiency "E" at the

same time? If so, how are they worn? If not, which of the "E's" do they wear?—LT W.F.S., USN.

• Only one Navy "E" may be worn on the uniform at a time. Thus the "E" may represent a battle efficiency award and/or one or more proficiency awards at the same time. Hashmarks are worn under the "E" to indicate the second and subsequent consecutive receipt of the same award.

Article 0653.4B of "Uniform Regulations" provides that the Navy "E" is worn on the uniform by the enlisted members of crews of ships awarded the Battle Efficiency Pennant. It also provides that in accordance with instructions of the Chief of Naval Operations, the Navy "E" may be worn by men assigned to shipboard stations designated to receive proficiency awards for attainment of excellence in certain weapons or operations.

OpNav Inst. 3590.4A sets forth the rules governing the awards for battle efficiency competition and proficiency in weapons and authorizes the wearing of the Navy "E" in this connection.

Though "E's" painted on the ship itself may be green, red, yellow or white, "E's" worn on uniforms are either white or blue—or in a very limited number of cases, gold. (A detailed discussion of Navy "E's" is contained in the July 1960 All Hands, pp. 8 to 11.)—Ed.

Claims from Kittiwake

SIR: We the crew of USS Kittiwake (ASR 13) would like to stake out claims to some firsts. But before we do, we'd like to point out that our ship holds the current Battle Efficiency Award for Atlantic Fleet submarine rescue vessels. Now for the records:

Kittiwake was the ASR that participated in the first successful firing of a Polariss missile off Cape Canaveral, Fla. USS George Washington, SSB(N) 598, was the firing ship. Date: 20 Jul 1960.

Kittiwake set a world's record in a submarine rescue chamber exercise. The chamber carried an officer and four EMs to a record depth of 705 feet. Date: 13 Sep 1959.

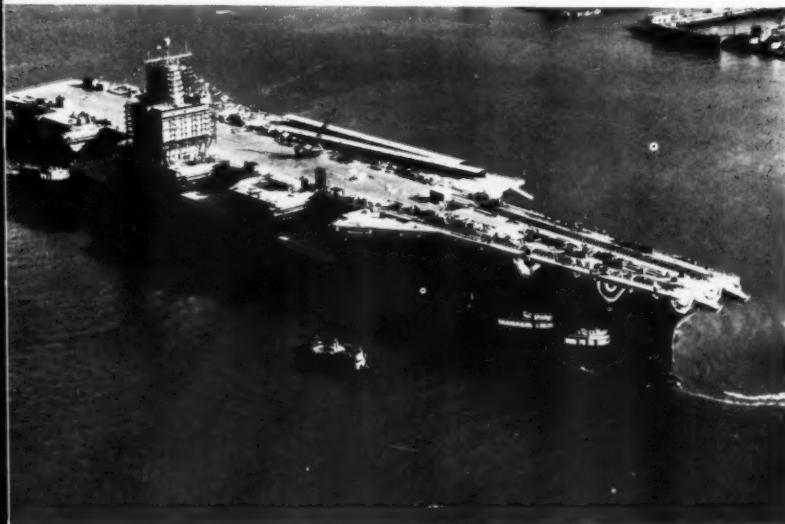
From Kittiwake's decks C. M. Prickett, GM1, USN, set a new open-sea diving record, reaching a depth of 501 feet. Date: 21 Apr 1949. Although this was some time ago, we've yet to hear of anyone going farther.

And now, Kittiwake is—we believe—the first ASR to have a color TV set aboard for the crew's recreation.—The Crew.

• Good ships make good records. As for the color TV set, chances are there are few ships of any type with such a feature.

As for the diving records you claim, the Diving School tells us there's no way of knowing whether or not your marks still stand.—Ed.

WORLD'S LARGEST—USS Enterprise (CVAN 65), Navy's first nuclear-powered aircraft carrier and world's largest ship, is moved to outfitting pier by tugs.



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Not Entitled to Sea Pay

SIR: In February I was assigned to the pre-commissioning crew of a dock landing ship. Four months later the ship was commissioned. During those four months, however, I did not receive any sea duty pay. My sea duty pay began when the ship was commissioned.

I notice on page 24 of the October 1960 issue of ALL HANDS that a man who had a question about pre-commissioning sea duty was told: "Your sea duty began when you reported to the pre-commissioning crew..."

On that basis, I wonder if I was, after all, entitled to sea duty pay for the four months in the pre-commissioning crew.
—W. J. A., YNCA, USN.

• The ALL HANDS letter you mentioned discussed sea duty as it concerned sea duty dates for rotation purposes — which is a matter of Navy Department administrative control.

On the other hand, sea duty for entitlement to sea duty pay, like all pay and allowances matters, stems from law and Executive (Presidential) Order. Under such regulations, persons in a pre-commissioning crew are not entitled to sea duty pay. There may be a few exceptions, but that's the general rule.

Complete details on this subject may be found in Article 044060 of the "Navy Comptroller Manual."—Ed.

Wrong Bee in the Bonnet

SIR: What's the matter with you people? You missed the best ship in the Fleet when you listed the 1960 Battle Efficiency "E" winners in your October issue.

USS *Hornet* (CVS 12), now in West-Pac, won her second hashmark for the "E" award during 1960. Besides that, she also won an aviation safety award, a hashmark for the engineering gang's "E," the "A" for being the best anti-submarine carrier, and the "O" for having the best supply department for this type ship.

In addition to these awards, Anti-Submarine Squadron 37 aboard this ship won an "E" for antisubmarine warfare and an "E" for aviation safety, and Anti-Submarine Helicopter Squadron 2 won an "E" for antisubmarine warfare efficiency.

All in all, I believe this is well worth a mention in your magazine, and so do many of my shipmates.—C.E.V., AN, USN.

• We too thought we had missed your ship, but before we attempted to find the weak link in our information chain, we checked the October issue again.

On page 19, column one, second ship listed under Air Force, Pacific, we found *Hornet* (CVS 12). Could that be the same ship you are talking about?

You also mention that Anti-Submarine Squadron 37 aboard your ship



COOLING DOWN—Civilian firemen watch NAS Anacostia firemen demonstrate effectiveness of foam in putting out fire around simulated fuselage.

won an aviation safety award. Although you couldn't have known this when you wrote your letter, we did run that story in the November 1960 issue.

For all the awards we did not mention, however, please accept our sincere well done.—Ed.

Crash, Fire and Rescue Program

SIR: Much has been written about the always-alert crash and rescue crews at naval air stations and also about the alertness of many metropolitan fire companies and volunteer fire companies which surround most of our air stations.

Naval Air Station Anacostia, Washington, D.C., has long recognized the need for closer cooperation between the Navy and civilian fire companies. This year NAS Anacostia hosted its fifth Crash, Fire and Rescue Program.

More than 125 fire companies within a 15-mile radius of the air station, which have been organized into mu-

tual aid companies, have been represented. Each year members of these units return to NAS Anacostia where they not only observe the latest military apparatus in action, but actually demonstrate their own equipment.

One of the primary purposes of this program is to acquaint the visiting non-military crews with the problems of crash rescue and fire fighting. And by participating in simulated crash procedures, the groups will be better prepared to handle aircraft accidents which might occur in their own communities. The local fire companies are also trained by NAS Anacostia in crash and rescue work which could mean the difference between life and death for a pilot.—H.E.H., LCDR, USN.

• This orientation program in cooperation with civilian fire companies sounds like a winner. Other stations that do not already have a similar program in effect will be glad to hear about the success of your program.—Ed.



A HOT SHOW — Civilian firemen training at NAS Anacostia, Washington, D.C., demonstrate use of standard equipment to put out a gasoline fire.

Boston's Been and Gone

Sir: Once again *uss Canberra* (CAG 2) has tried to steal the thunder of the world's first and foremost guided missile cruiser—*uss Boston* (CAG 1). In your October issue you state, and I quote: "Upon transiting the Panama Canal, *Canberra* became the first guided missile cruiser to enter the Pacific."

In the interest of historical accuracy I think you should consult the record of Midshipman Cruise Bravo in the summer of 1957. *Boston*, in company with the battleship *uss Wisconsin* (BB 64) and other units, traveled from Norfolk to Valparaiso, Chile, and back on that cruise—thus *Boston* entered the Pacific nearly two full years ahead of the world's second guided missile cruiser.—D.D.S., CHELEC, usn.

• *If we've said it once, we've said it a thousand times—if you're going to claim a first—don't. You'll probably be wrong.*

In this case, however, it's possible we may be partially at fault. We may have misinterpreted Canberra's release to mean that she was claiming to be the first of her type to enter the Pacific, when in reality all she meant to say was that she was the first to operate in the Pacific as a regularly assigned unit. If so, we're sorry to have caused a controversy.—Ed.

Enlisted Men at Naval Academy

Sir: When the Class of 1960 graduated from the U.S. Naval Academy, there were many men who had come from the Fleet in the summer of 1956, and until the day before graduation had never been discharged from their enlisted service.

I will outline my own experience, as an example.

I enlisted in July 1954 and served on active duty as an enlisted man until July 1956, when I was sworn in as a Midshipman, USN. On 7 Jun 1960, I received my discharge from enlisted service, and on the next day I received

Ship Reunions

News of reunions of ships and organizations will be carried in this column from time to time. In planning a reunion, best results will be obtained by notifying the Editor, **ALL HANDS Magazine**, Room 1809, Bureau of Naval Personnel, Navy Department, Washington 25, D. C., four months in advance.

• *uss Elmore* (APA 42)—A reunion is scheduled for 29 July in Wilmington, Del. For more details, write to Harvey P. Parry, 1431 Wedgewood Rd., Oak Hill, Wilmington 5, Del.

• *uss Guin* (DD 433)—A reunion will be held at the Statler Hilton Hotel, Boston, Mass., on 13, 14 and 15 July. Write to Bart Di Reda, 17 Rena St., Worcester, Mass.

• *uss Idaho* (BB 42)—The fourth annual reunion will be held on 21, 22 and 23 July at Norfolk, Va. For further information, write to *uss Idaho* Association, P. O. Box 8048, Norfolk 3, Va.

• *uss New York* (BB 34)—A reunion of those who served on board during the period 1914-45 is being planned. For details, write to Bernard J. Grimshaw, BM3, usn, *uss Eldorado* (AGC 11), FPO, San Francisco, Calif.

• *uss LST 467*—A reunion is planned for those who served on board during World War II. Write to LTJG D. P. Teninty, USCG, *uscg Cutter Gresham* (WAVP 387), Government Island, Alameda, Calif.

my commission upon graduation. Hence, from June 1956 to June 1960, I served both as a midshipman and—because I had no release from enlisted service—as an enlisted man.

On my discharge paper (DD 214), in item 24, I was credited with five years,

11 months, and seven days as uninterrupted active duty to be used for pay purposes. I am now being paid for only two years longevity (1 Jul 1954 to 26 Jun 1956).

The purpose of not discharging men who come from the Fleet is to cut down on resignations from the Academy by requiring those men who resign to continue with their obligated enlisted service. This also affects those men discharged from the Academy because of poor grades, misconduct or ill health. Thus, it seems that the time counts for the Navy, but not for the individual.

The situation outlined above is common, with minor exceptions, to about 200 members of the Class of 1960, USNA, and to all classes graduating after 1960. This hasn't happened before because the men who have come from the Fleet in the past were discharged from enlisted service on the day they were sworn in as midshipmen.

Since I was not discharged from enlisted service until 7 Jun 1960, I contend that this date should be used as a terminating date of my enlisted service and that the period from 1 Jul 1954 to 7 Jun 1960 be used as my uninterrupted time for pay purposes. Therefore, my pay entry base date should be 1 Jul 1954, not 14 Jun 1958.—ENS A.M.A., usn.

• *Your longevity was figured correctly. This is the reason: Under Public Law 84-614, the shipping articles of an enlisted man should not be terminated when he becomes a Naval Academy midshipman. The law also states that inactive enlisted service, served concurrently with service at the Naval Academy, will not be included in computing the service of an officer for any purpose.*

The "Navy Comptroller Manual," Para. 044013-7b, explains the provisions of this law.—Ed.

Training in Hydrofoils?

Sir: In the October issue of **ALL HANDS** you published an article about hydrofoil ships. In it, you stated that the Navy plans to use several patrol craft, hydrofoils, in ASW work.

Is there any training program established for men who will be assigned to the PC(H) program? If so, what are the qualifications?—J.W.M., RD1, usn.

• *Only one hydrofoil patrol craft is currently under construction, and even this one will undergo further evaluation before it becomes operational. As we said in the article, the Navy believes these ships have a great ASW potential, but they are not ready for immediate use. Their use in ASW will be at some future time. At present, to our knowledge, no training program is established and no personnel are being assigned to the PC(H) program.*—Ed.



PILOT SAFETY—Cockpit installations in new flight capsule, designed to separate from jets at any altitude, get check for comfort and convenience.

What's the Right Time?

Considerable sweat and tears by the ALL HANDS Art Department (plus a healthy assist by the Hydrographic Office) went into the following two pages which illustrate the time zones around the world and the significance of the International Date Line.

During the inevitable sleeveless discussions around the drawing board the question arose: Why time zones at all? Why do you lose or gain a day when you travel around the world? Or do you?

Here's the story, as we see it:

Our standard time system is based on the theoretical division of the surface of the globe into 24 zones, each of 15 degrees of longitude (distance east and west). The first zone is the one which has as its central meridian the Greenwich Meridian, and the meridians seven and one-half degrees east and seven and one-half degrees west as its eastern and western limits. This is called the "zero zone" because the difference between the standard time of this zone and Greenwich Mean Time is zero. Each of the zones in turn is designated by a number representing the number of hours by which the standard time of the zone differs from Greenwich Mean Time.

(To help you visualize how this works, imagine if you can, that you are sitting on a small platform, not too far from the earth's surface directly above, let's say, Washington, D.C. However, this platform is stationary, and the earth is revolving below you. One hour later, the earth would have revolved 15 degrees and Washington would be 15 degrees to the east. In 24 hours, Washington (and all the rest of the earth) will have made one complete revolution, and Washington will be directly below you again. One day will have elapsed.)

To refer to the map again: You will notice that the zones in east longitude are numbered in sequence from one to 12 and labeled minus; those in west longitude are likewise numbered one to 12 and labeled plus. The 12th zone is divided by the 180th meridian. That half in east longitude is numbered, as you'd expect, minus 12; the half in west longitude is numbered plus 12.

The theoretical system described above is applied, in a strict sense, only in oceanic regions. On land, or in groups of islands, the system is applied with certain local deviations, which are made necessary by frontiers, convenience of an entire island group to maintain the same time zone, or for other reasons.

The time used in each country, whether it is the time of the corresponding zone or modified because of one of the reasons mentioned above, is an hour fixed by law and, for this reason, is called legal time, or more generally, standard time.

Another deviation from this theoretical system is that certain countries, for economic reasons, modify their legal time for part of the year, especially in summer, by advancing it an hour or some other fraction of time. Where these deviations are maintained on a year-round basis, the time kept is still considered to be standard time.

The 180th degree meridian represents, theoretically, the Date Line. This more-or-less north and south line is a rather recent development in the history of navigation. It was adopted as the logical place to change the date because the meridian of 180 degrees is directly across the globe from (or is the antimeridian of) the zero, or Greenwich Meridian. This was the outgrowth of the International Meridian Convention of 1884.

We have a Date Line because of the time zones. As mentioned above, there are 24 standard time zones. Each differs from the zone to the east and the zone to the west by one hour. With 24 hours spread over the globe, and with 12-hour clocks in general use, confusion would be world-wide if there were no Date Lines.

The old day has to die out somewhere so that the new day can begin.

Here's how it would work if there were no Date Line. Suppose you boarded a Navy plane at San Diego and started on a round the world flight, flying eastward. In your trans-United States flight, you'd set your watch ahead three times.

As your plane continued east, against the sun, you'd be 12 hours

ahead of San Diego when you were over the Persian Gulf. When you finally reached Pearl Harbor, Hawaii, your watch would be 22 hours ahead of your friends in San Diego.

As you arrived back at San Diego at the end of your trip around the world, your watch would be the same as your friends', but your calendar would not. You would be just 24 hours ahead of them. Your calendar would indicate 15 January, for example, and your pals' would show 14 January.

This situation would arise because of the requirement that you set your watch ahead one hour each time you reached a new time zone (on an eastward trip only). To counteract this situation created by man-made time zones, another artificial condition had to be set—the Date Line.

There is another reason for the Date Line—one familiar to navigation students. Go back to the 24 time zones. The fact that each time zone has a different hour means that the 24 hours of the day exist at the same instant. As you know, a new day comes in at midnight. Midnight, in turn, comes in progressively from zone to zone and east to west.

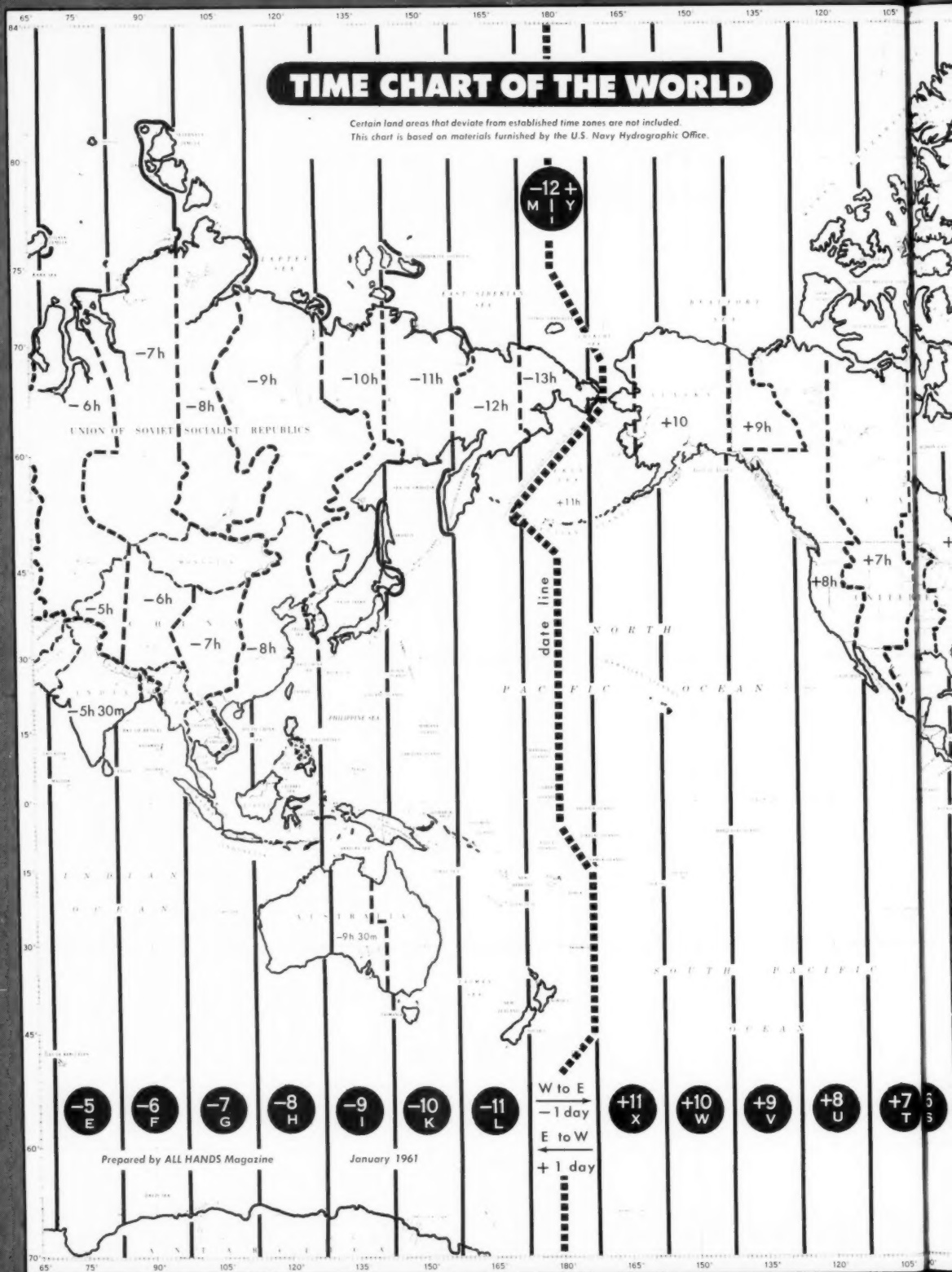
Since the date does not change at the same instant all over the world, two different dates exist somewhere on the earth at the same time. Midnight furnishes one boundary between the two dates. If mariners and aviators who change longitude extensively in their long voyages or flights didn't have a second boundary, dates would back up and overlap. Consequently, the Date Line came into logical use as the second boundary line.

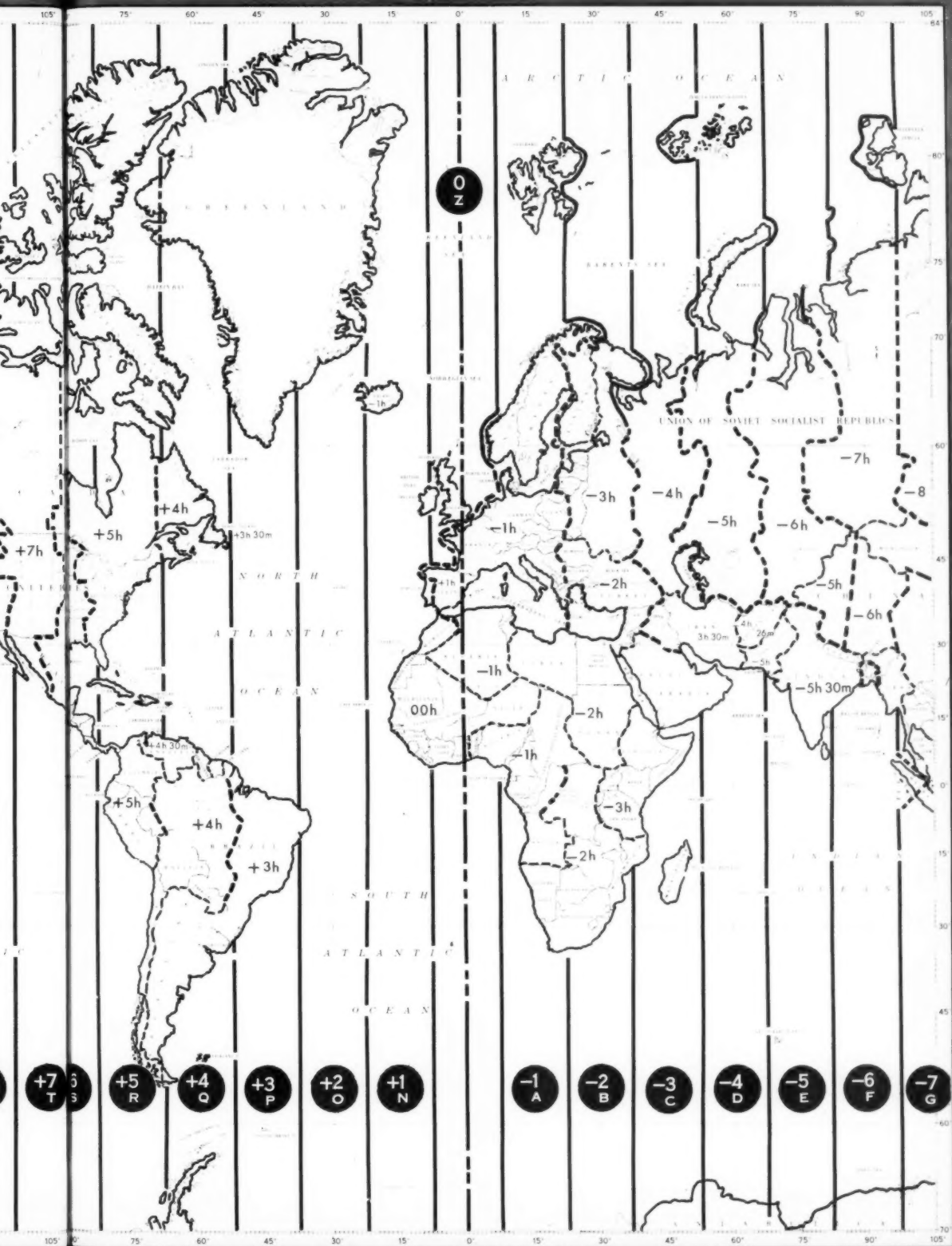
The 180th meridian of longitude was informally adopted as the Date Line for at least two good reasons. First, its location is conveniently halfway around the globe from the zero line of Greenwich, England. Again, it travels down a relatively isolated section of the earth, the Central Pacific.

Like the time zones, it frequently deviates from the 180th meridian to keep the same date in a group of islands. It zigs to the west at the Aleutians. In the Fijis, it zags to the east. Now—turn the page.

TIME CHART OF THE WORLD

Certain land areas that deviate from established time zones are not included.
This chart is based on materials furnished by the U.S. Navy Hydrographic Office.





★ ★ ★ ★ TODAY'S NAVY ★ ★ ★ ★



THE PAYOFF—Cruisemen of USS Newport News (CA 148) stand formation during advancement ceremonies in which 200 crewmen moved up in rate.

FRAM Ships Now in Med

The first three FRAM (Fleet Rehabilitation and Modernization) ships to deploy are now in the Mediterranean operating with the U.S. Sixth Fleet. *uss Massey* (DD 778), *Zellers* (DD 777) and *Sperry* (AS 12) will spend about seven months in the Med.

The FRAM program, under which these ships were remodeled, was initiated in 1958 to help modernize the U.S. Navy's destroyer force which then consisted mostly of World War II-built destroyers.

Massey, *Zellers* and *Sperry* were stripped of all topside superstructure and equipment and the ships

were renovated from the keel up. All worn parts and machinery were repaired, rebuilt or replaced to give power plants almost new ship performance. Air conditioning in the living and working spaces was also added.

The combat information center was enlarged and modernized and relocated immediately abaft the bridge. Detection and communications systems were up-dated and a new weapons system installed.

This new weapons system includes DASH (Drone Anti-Submarine Helicopter). With the addition of the hangar and flight decks for this weapon and with the new after mast

arrangement, the destroyers take on a new look which is considerably different from the familiar "tin can" silhouette.

FRAM is expected to extend the efficient life of the ships five years. In some ships, when the more costly and extensive FRAM I overhaul is done (this includes *Asroc*, Anti-Submarine Rocket), it will add eight years to the life of a destroyer.

Another advanced system slated for installation in future FRAM ships is the VDS, or Variable Depth Sonar. The VDS deprives the submarine of a favorite hiding place beneath the thermal barrier. This thermal barrier is a layer of water of a different temperature than the surface water. The variance of the temperature causes sonar signals to reflect and thus leave the submarine undetected. The new sonar should be effective because it can be lowered below the thermal barrier. (A complete story on FRAM can be found in the March 1960 edition of *ALL HANDS*.)

1500-Mile Range for Polaris

The Navy is now testing a new 1500 nautical mile (1725 statute mile) range *Polaris* A-2 missile at Cape Canaveral, Fla. The 1200 nautical mile *Polaris* that will go to sea in the nuclear-powered submarine *uss George Washington*, SSB(N) 598, has been designated as *Polaris* A-1.

Although a few refinement tests will be conducted on the A-1 missile from time to time, the development flight test program is nearing completion. Over 50 flight tests have been carried out in the A-1 development program in the past 15 months. This includes over 10 launchings from submerged nuclear-powered submarines, plus several underwater launches.

Polaris A-2 will have a longer burning first stage motor and a lighter and more powerful second stage motor than the operational *Polaris* A-1.

Like *Polaris* A-1, flight tests of the A-2 series will be made from land launch pads, from the surface test ship *uss Observation Island* (EAG 154) and from submerged

YESTERDAY'S NAVY



On 1 Jan 1940 the Tenth Naval District, with headquarters at San Juan, Puerto Rico, was established. On 3 Jan 1912 RADM Robley D. "Fighting Bob" Evans died after a career that extended from the Civil War to the cruise of the Great White Fleet. On 7 Jan 1822 *USS Porpoise* captured six pirate vessels in the Caribbean. On 12 Jan 1944, NAS Port Lycautey was established. On 23 Jan 1945 *USS Barb* (SS 220) entered Namkwan Harbor, China, where she made an attack on Japanese auxiliary shipping. On 26 Jan 1913 the body of John Paul Jones was placed in a crypt in the Chapel at Annapolis.

Fleet ballistic missile submarines.

Besides the A-1 and A-2 *Polaris* missiles, the Navy has also been directed to start development of *Polaris* A-3, a 2500-nautical-mile-range missile which is expected to be in our defense arsenal by 1965.

All Fleet - ballistic - missile - firing submarines will be able to carry and launch the improved-range missiles as they become operational.

Snook Launched

Snook, the sixth submarine of the streamlined *Skipjack* class, has been launched. Bearing the designation SS (N) 592, *Snook* is the Navy's 21st nuclear-powered submarine. She has an over-all length of 252 feet and a displacement of 2830 tons.

The present *Snook* carries on the name of SS 279, a World War II submarine. The earlier *Snook* earned seven battle stars in operations against the Japanese in the Pacific and was lost on patrol in April 1945.

Automated Warehousing

The Navy has taken a step that may someday lead to a supply system in which punched card orders from ships and stations are fed into storage centers like pennies into a vending machine to bring supplies popping out like gumballs.

Because of the high initial costs of such a system and the financial risk involved in a sudden switch to complete automation, fully mechanical warehouses are still a long way off.

However, a 1200-foot conveyor fitted with electronic accessories is scheduled to be put into operation at the Naval Supply Center, Bayonne, N. J., in a move toward the automated warehousing of the 245,000 items stored there.

The operation is viewed as the forerunner of a general conversion to automated warehousing throughout the Navy supply system. Other large supply centers such as those at Norfolk, Va., and Oakland, Calif., will probably follow the Bayonne pilot installation, which is thought to be the first use of automated warehousing on a large-scale, multiple-product basis. (A few civilian firms already have automated storage, but not with the wide variety of items that are handled at Bayonne.)

The automated storage idea has been under consideration for about five years. Its practicality was indi-



ON YOUR MARK—Cat officer on board *USS Independence* (CVA 62) gives the signal to send F3H *Demon* interceptor skyward off forward catapult.

cated by a general survey which showed that Bayonne's largest transportation expenses arise inside the storage buildings, where supplies are moved by hand trucks, fork lifts and tractors.

The conveyor is being installed in the main building at the supply center. As part of the switch to the new system, stocks have already been rearranged along the conveyor line, positioned according to the rapidity of their turnover. Eventually, the Supply Center hopes to have a completely automatic system which will be triggered by electronic data processing machines.

In operation, the conveyor will run the length of the main building, bisecting long rows of bins. Warehousemen stationed at the heads of the bins will put requested items in special tote-boxes. Then they will set "signals" on the boxes to show where the containers are supposed to go.

At the end of the main building the conveyor will pass over an enclosed bridge to the packing and preservation building. Here the tote box will enter a section of the conveyor system which has about the same function as a railroad marshalling yard. When the box reaches a special electronically operated sensing machine, this device "reads" the signals sent by the warehouseman and automatically shunts the box to one of five packing and shipping units.

In the "marshalling yard" area a man at an electronic console watches

a panel of lights to keep track of the material moving through the yard. By pushing buttons he can re-route traffic to avoid bottlenecks, equalize work loads among the packing units or take advantage of changing conditions.

The packing and shipping units each have a specialty of their own.

In the first one, called the Overpack Area, parcels are packaged according to their destinations—whether in the metropolitan New York-New Jersey area, elsewhere in the continental United States, or overseas. The Overpack unit also acts as a pressure release, so the man at the console can divert work to this section whenever the load on another unit gets too heavy.

The second packing and shipping unit prepares material which is to be sent out by parcel post. The third unit handles items that can be sent out from the Supply Center in the manufacturer's original container simply by readdressing the package to whatever ship or station has requested it.

In the fourth unit, items going out by freight are separated according to the shipping charges on them, so that the Government doesn't have to pay "first-class rates on third-rate supplies."

The fifth unit, known as Customer Accumulators, consists of special areas where assorted items intended for a common ship or station can be collected to go out in a single shipment.

—T. J. McCarthy



'SPECIAL DELIVERY'—Mail for the Fleet is loaded at NAS. Rt: COD cargo is secured for delivery to carrier at sea.

COD Delivers the Goods

Navy pilot LT Ed Wilber tugs his shoulder straps tight, makes a final check of the instrument panel, and hits the "gear down" button before going in for another routine carrier landing. As he heads toward the carrier flight deck, the mirror-reflected meat ball guides him to the arresting wire which jerks him to a stop.

Some two hours later, LT Wilber has already left the ship and is landing at his advance base somewhere overseas. Back in the Fleet, thousands of men are having mail call; an early warning plane is being repaired with parts that had not been available on the carrier, and the executive officer breathes easier because he knows a seaman from Decatur, Ill., is heading home on emergency leave.

LT Wilber and his plane are part of a group known as a carrier on-board delivery (COD) unit—an important part of the Navy's underway

replenishment system. The COD aircraft has joined with the Fleet oilers, tenders and supply ships in the logistical support that gives the U.S. Fleet its increased mobility.

COD aircraft also add immediacy to underway replenishment. Coupling its relatively high speed with its ability to operate in an area hundreds of miles from an advance base, the COD plane has become the ideal medium for delivering small high-priority cargoes to the Fleet.

For example, during NATO exercises in the Eastern Atlantic, a detachment from the Norfolk-based Fleet Tactical Support Squadron 40 (VRC 40) operated from land bases in advance of the Fleet. They carried priority cargo, passengers, and tons of mail to a Fleet of 71 U.S. ships with a total manpower of 27,455. Six emergency medical cases were evacuated to hospitals hundreds of miles from the ships, and 25 men were flown ashore for emergency leave during the two-week exercise.

Admirals, ambassadors, newsmen and other VIPs were also shuffled around the Fleet—some to coordinate and view maneuvers, and others to report on them to the world.

To perform its mission, VRC 40 operates 10 TF-1's (stripped-down versions of the S2F antisubmarine search plane). With a load capacity of 4000 pounds, a top speed of 250 mph, and a range of 1200 miles, this aircraft can either be catapulted from a carrier or it can take off under its own power.

For this particular NATO support job, however, four of the TF-1's, along with 10 pilots and 20 enlisted men, deployed aboard *uss Saratoga* (CVA 60) and *uss Essex* (CVS 9).

The *Saratoga* detachment operated from Port Lytautey, Naples, Palma, Barcelona, Rota, and Madrid, and then joined the *Essex* group at Lossiemouth, Scotland. The combined group then operated from bases in Norway, Northern Ireland, England and, finally, France.

ON DECK—COD planes are unloaded on *USS Saratoga* (CVA 60). Rt: Maintenance keeps repairmen working nights.



Often the ground crew worked from 0600 to 2300 to keep the COD flights operating. As an indication of the work-load of VRC-40 crewmen, they pulled only two liberties during the two weeks they operated with the NATO force.

Normally, the 30 pilots and 120 enlisted men who make up VRC-40 operate along the U.S. coastline in support of Fleet training maneuvers. During an average week they haul some 10,000 pounds of air cargo and about 80 passengers to and from ships at sea.

VRC-40 is an alert group. When it was only five days old, for example, it received its first deployment orders. Two hours after the message was received, six of the eight planes then operational were heading for *uss Wasp* (CVS 18), underway to the Congo. They were a stand-by group to help evacuate American nationals—if necessary. As it turned out, they were not needed, nor was the fresh supply of baby bottles that had been put aboard for that trip.

—William L. Howard, JO2, USN.

Cimarron on Good Will Tour

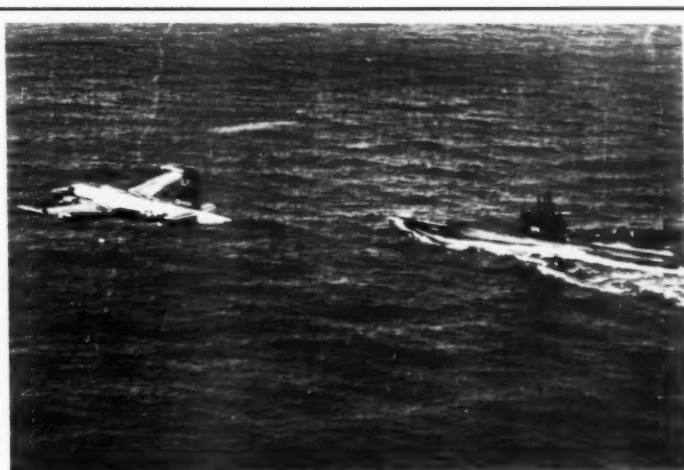
Soon to head for the Seventh Fleet and the Western Pacific is *uss Cimarron* (AO 22), which claims the longest record of continuous active service of all U. S. Navy ships currently in commission.

While at sea with the Seventh Fleet the big Fleet oiler will carry out her usual ship-fueling role. But, while in port at Hong Kong, crew members of the Fleet oiler will carry out another role—that of “*Cimarron* Operation Handclasp.”

Cimarron's CO, Captain J. C. Weatherwax, said, “Hong Kong is literally choked with refugees. In its few square miles are concentrated nearly four million people where only 10 years ago lived one million. The swelling of the population in the refugee areas has created a situation which can be helped only by the efforts of those fortunate enough to be in a position to help.”

“There just aren't enough means for these refugees to care for themselves in the over-populated areas. The purpose of *Cimarron* Operation Handclasp is to help alleviate the plight of these refugees.”

Cimarron is accepting donations of used clothing forwarded before 1 February and addressed to the ship, care of the Chaplain, U.S. Naval Station, Long Beach, Calif.



FAR OUT — P2V Neptune drops mail to sub on station 400 miles at sea.

Friendly Subs Are Bombed—with Newspapers

Thanks to the good will—and deeds—of members of Patrol Squadron 16, submariners are enjoying their daily newspapers — even though they may be 400 miles at sea.

The service began when VP-16 pilots reported that the submariners with whom they were conducting training exercises were asking them, over the radio circuit, various questions about the latest news. The submariners, operating out of Key West, Fla., and Charleston, S.C., spend about a week out of port. The P2V Neptunes, on the other hand, take off daily from NAS Jacksonville, Fla.

VP-16 men obtained some expendable ordnance cans, big enough to hold a number of rolled-up newspapers. To each can they attached a small parachute.

Now, just before the day's joint exercises begin, a Neptune flying at 150 feet takes a position ahead of the surfaced submarine. The airplane then opens its bomb bay and the red-painted canister descends to the sea.

Aboard the submarine a couple of topside crewmen approach the canister, now waterborne, and catch the parachute's lines with a boat hook. Soon after, the latest news is being read aboard ship.



CHUTE IT — LTJG R. C. Truax, aviation equipment officer of VP 16, holds delivery container as W. M. Carter, PR1, shows chute he designed.



STAR TIME—Joseph Smith, PR3, (left) of Corpus Christi and R. J. Hightower, SN, reenlist in Navy's STAR program.



Naval Propellant Plant

As missile power becomes more and more important to our nation's defenses, the U.S. Naval Propellant Plant at Indian Head, Md., is again approaching the peak production it reached during both World Wars and the Korean fighting.

From the production lines of this plant have come the basic propellants for the third stages of the satellite launching *Vanguard* and moon-probe vehicle *Pioneer*. Soon the plant will produce propellants for the Navy's FBM *Polaris*, as well as for *Asroc*, and *Tartar* boosters.

Navy operational missiles such as *Terrier*, *Talos*, *Weapon Able*, *Boar* and *Bullpup* as well as the Air Force's *Snark*, all contain propellant grains manufactured at the NPP. Other operational missiles which contain propellants made at the plant include *Sidewinder* and *Zuni*.

In addition, the Propellant Plant

is one of the foremost developers of solid propellants for auxiliary power units. Gas generators for *Sidewinder*, *Sparrow* and the Army's *Hawk* are supplied by the plant.

During the 70 years since ground was first broken at Indian Head in 1890 — for what was then called the Naval Proving Ground — weapons systems have changed and the Propellant Plant has kept pace.

The first officer-in-charge, Ensign R. B. Dashiell, had under his command an officer and 50 civilians, most of whom were carpenters, bricklayers and painters necessary to maintain the buildings.

Today there are many more men assigned there, including some 250 scientists and engineers involved in the research, development and production of propellants for advanced missile systems.

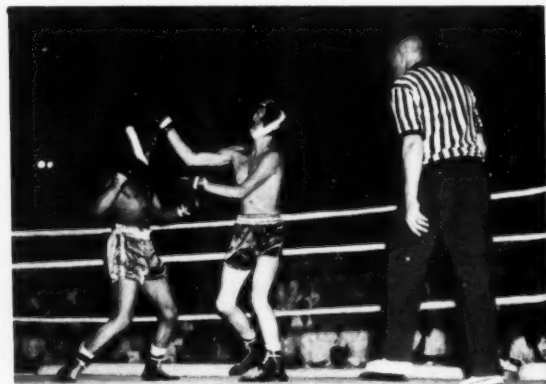
In 1890 the base was almost isolated. Most traffic to the plant was

by the Potomac River. The only other way to reach the base was over a few dirt road tracks and they were normally impassable because of mud or snow.

Barge travel remained the principal means of transportation until World War I, when a railroad spur was built which connected with the main line. Today, travel to Washington, especially for urgent military matters, is often accomplished by helicopter.

The history of production at the Propellant Plant goes back to 1900, when facilities for making smokeless powder were completed.

Over the years the name of the activity has also been changed. In 1932, several years after the proving ground operations had been moved to Dahlgren, Va., the name of the plant was changed to the U.S. Naval Powder Factory. In 1958, the plant became the U.S. Naval Propellant



HERE'S HOW boxers from USS Hancock (CVA 19) captured all honors at recent Subic Bay open boxing tournament.

Plant, which more appropriately describes its present mission.

Throughout the plant new procedures and facilities are going into operation. For example, a million-and-a-half-dollar facility for the manufacture of base propellant grains is nearing completion. In another department, which test fires Propellant Plant-made rocket motors as well as other solid propellant components of Navy ordnance, a new Automatic Data Acquisition System (ADA) is being installed.

Over the years the names of many great men in the world of science have been on the rolls of the plant. The Goddard Power Plant, for example, is named in honor of Dr. Robert Goddard who pioneered in the development of the bazooka at the Propellant Plant. Also, Dr. George Patterson, the inventor of flashless powder, did much of his research work at the plant.

These men, together with many others, have combined their talents and efforts to bring the U.S. Naval Propellant Plant from the early days of smokeless powder to the forefront of missile-age production.

Metal Writer

A man with an unusual craft is Shipfitter (Metalsmith) Second Class Norman R. Barnes, usn.

He is in charge of the engraving shop at the Submarine Base, Pearl Harbor, Hawaii. When not assigned to shipfitting duties, he constructs plaques for local personnel retiring from the Navy.

Prior to the dedication of the Submarine Memorial at Pearl Harbor, Barnes managed only 17½ hours of sleep during the final week. At the

last minute the plaques on the memorial had to be finished in a copper-plate bronze. Barnes did the engraving work and made the last-minute preparations.

Barnes is also an expert model builder, another knowledge that the Navy has put to use on occasion. He began working with plastics and models at Sapulpa, Okla., his home town.

One job of which Barnes is especially proud is a model he constructed of a proposed torpedo-lowering mechanism for the guided missile submarine *USS Growler* (SSG 577).

CPO Club for SRNC

Chief petty officers in the Annapolis, Md., area now have their own club. Until now, according to officials of the new CPO club, the Severn River Naval Command was the only Naval District River Command that did not have a CPO club within its limits.

The establishment of the club is the result of many years' work.

Newly elected officers of the Club, which is located near the U.S. Naval Station housing area in Annapolis, are B. E. Brady, ETC, President; W. W. Heath, FTC, Vice President; F. O. Carr, YNC, Secretary; M. R. Kelley, ETC, Manager, and CWO T. A. Dietz, Treasurer.

Sixth Sub Chaser for Korea

The ex-*USS Winnemucca* (PC 1145) has been transferred to the Republic of Korea. The event took place at Pier 91, Naval Supply Depot, Seattle, Wash.

Now named *ROKS Otae San* (PC 707), the ship is the sixth PC to be commissioned in the ROK navy.

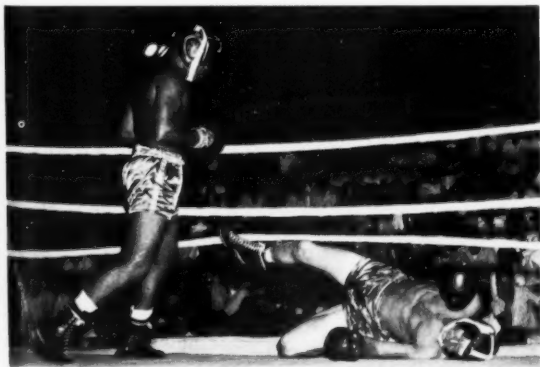


COURTING TIME—SubPac hoopsters chalked up a victory over Hawaii Marines as Navymen ashore and afloat hit the boards for basketball season.

Otae San, which takes the name of a mountain in Korea, has a crew of five officers and 60 enlisted men. The ship is classed as a submarine chaser and has a 173½-foot length, a 23-foot beam and a full load displacement of 348 tons.

Otae San was built at Bay City, Mich., and first commissioned on 1 Jun 1944. Before her inactivation in August 1955, she performed many air-sea rescue details in the mid-Pacific area. During her inactivation she was with the Columbia River Group, Pacific Reserve Fleet.

Following the transfer to the ROK navy, the ship remained in the Seattle area, undergoing intra-ship exercises and training drills, and preparing for sea. She then departed for San Diego, Calif., for more training.



DECKED OUT—Andy Cudjo, *USS Hancock's* welterweight, KO's opponent. Rt: *Hancock* boxers put on demonstration.



WELCOME ABOARD—British sailors visit with cruisemen of USS *Northampton* (CLC 1) while in Portsmouth, England, during break in NATO exercises.

Boiler and Turbine Laboratory

Now in its fifty-first year of service, the Naval Boiler and Turbine Laboratory continues tests and evaluation in its field. Located at the Philadelphia Naval Shipyard, it is the only lab of its kind in the United States.

Established in November 1909 as the Fuel Testing Plant, the lab has developed and designed naval boilers, propulsion equipment and auxiliary equipment.

In its early days, the lab carried out experiments with fuel oil and naval boiler design. The lab also provided a nucleus of trained personnel and developed instruments and equipment for testing and developing boilers and accessories.

Over the years there was increased activity in boiler development. In 1932 the lab became the Naval Boiler Laboratory. In 1941 BuShips saw the need of a counterpart of the lab's boiler division for turbines, gears and other main propulsion machinery. The change to its present name was one result.

Work in the new fields of automatic controls and specialized instrumentation receives much emphasis today. Particular emphasis is placed on evaluating improvements to the reliability, lightness, compactness and economy of naval power-generation and propulsion equip-

ment. Investigations have been carried out in the fields of machinery noise, vibration, shock resistance, maintenance and shipboard operation. The lab also provides consulting services to the Fleet.

Now occupying a number of buildings, the lab has facilities duplicated nowhere else in the U.S. These facilities enable the lab to conduct full scale evaluations under simulated shipboard conditions. Past development evaluations were done with boilers and main propulsion equipment of *Iouca* class battleships, guided missile frigates and destroyers, attack aircraft carriers and nuclear-powered submarines.

During World War II certain of the lab's facilities were used for the production of the element U-234, used in the first atomic bombs.

Weather Station Flies with Hasp

A one-pound rocket-borne weather station has been developed by the Naval Ordnance Laboratory (NOL) in Silver Spring, Md. It is designed to probe the earth's stratosphere and radio back weather findings at altitudes up to 40 miles.

The miniature weather-collector is the payload for NOL's supersonic *Hasp* (High Altitude Sounding Projectile) rocket which is used by Navy ships at sea. The *Hasp* is an anti-aircraft rocket converted into a

routine weather-data collector.

When used aboard ship, the solid-fueled *Hasp* is launched from the ship's five-inch gun. When the rocket reaches maximum altitude the instrumented payload is ejected to float back to earth at the rate of 50 feet per second.

The 11-inch instrument package, which is suspended from a six-foot diameter metalized parachute, contains a battery-operated transmitter and a sensitive temperature-measuring device. A gauge to measure stratospheric pressures will be added to the package in the near future.

Wind direction and velocity are determined by tracking the metalized parachute with shipboard radar. At the same time, the instruments measure temperatures and continually transmit this information to the ship.

During tests by NOL at the National Aeronautics and Space Administration's Wallops Island, Va., facilities, the instrumented payload was rocketed to over 20 miles altitude, where it consistently broadcast stratospheric temperatures during its 30-minute earthbound journey. Tests with the payload in the not-too-distant future are expected to double this altitude and collect air pressure data as well.

The *Hasp* rocket with its weather-gathering payload, designed for use aboard Navy ships, needs no special launchers, tracking equipment or meteorological receiving and recording equipment.

Information gathered by the *Hasp* project will be helpful when firing long-range ballistic missiles or determining fall-out patterns if nuclear missiles are ever used in war.

Howtar Joins Marines

Leathernecks of the 1st Marine Division are testing a new artillery piece known as the "howtar." It is a cross between a 4.2-inch mortar and a 75mm pack howitzer—thus the name.

Originally constructed by the U.S. Army, the howtar is a rifled, drop-fire weapon. It uses standard 4.2 mortar ammunition.

The tube (gun barrel) is a modification of the mortar tube. To give greater stability during firing, a heavier base cap has been designed for mounting on the howitzer carriage.

The main carry-over from the howitzer is the weapon's carriage,

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with improvements made in the trails and the suspension system. The howtar provides a light, mobile, compact weapon, readily transportable by helicopter.

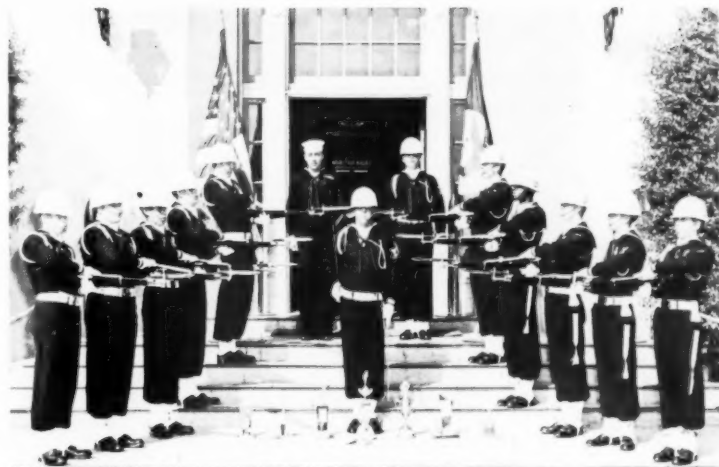
They Lead Destroyers

When two destroyer-type ships were seen moored to the same pier at Norfolk recently, it was a case of an original and a near-original joining company. The ships were *Norfolk* (DL 1) and *Preble* (DLG 15).

The former is a unit of the Atlantic Fleet's Destroyer Flotilla Four. The latter was en route to the west coast to join the Pacific Fleet. Both ships are known as frigates.

Norfolk set the pace, being the first ship of its type to be built for the Navy as a hunter-killer ship for antisubmarine warfare. She was the first major combatant vessel of a new category to be commissioned since the end of World War II. Originally rated a CLK (cruiser, hunter-killer ship) she was re-rated in 1951 as a DL (destroyer leader) and again in 1955 as a DL (frigate). From the start she has been a unique ship—a destroyer with a small cruiser's dimensions and displacing 7400 tons.

Preble is the second commissioned of the *Coontz* class of guided missile frigates. *uss Dewey* (DLG 14) was the first. The designation of guided missile frigate replaced the term frigate after *uss Wilkinson* (DL 5) was completed in July 1954. Since



MARCHING ON—In less than a year since it was organized the Precision Drill Team, NAS North Island, has marched off with 10 awards including seven firsts.

then, frigate types have more than tripled in number.

Preble, commissioned in May 1960, has changed considerably as compared to *Norfolk*. Twenty-eight feet shorter than *Norfolk*, the 512-footer weighs in at 5600 tons. Antennas top her masts and a pair of *Terrier* III missiles are angled and poised skyward on her fantail. Two radars rotate aft of her stacks and look more like huge overgrown searchlights. The pair of radars guide *Preble's* missiles—which can stop a supersonic bomber.

Much cruising lies ahead for

Preble. COMDESLANT predicts that she will steam a million miles in the next 20 years—and visit some 250 foreign ports in the process.

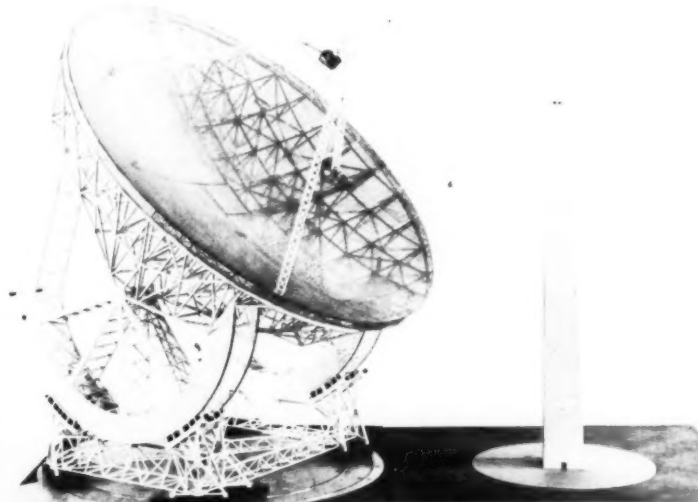
Destroyer warfare is being extended both offensively and defensively with *Preble* and her sister ships. She can stop or attack just about anything in the skies or beneath the seas through her *Terrier* missiles or her *Asroc* antisubmarine missile.

Asroc is fired from forward of the bridge and turns into an acoustic homing torpedo as it hits the water. Appropriately enough, the device from which it is fired is called "the coffin."

Norfolk is also equipped with *Asroc* and introduced the weapon to newsmen last summer at Key West, Fla. Before that exhibition, *Norfolk* demonstrated her adeptness in anti-submarine warfare against such undersea aces as *Nautilus*, *Albacore* and *Seawolf*. At Key West she went three-for-three in her jousts with the nuclear-powered *uss Skate*, SS(N) 578, in which she made three hits in three tries during the sham attacks.

Norfolk is a rarity among destroyer types in that she is not assigned to a squadron. She operates independently in this Cold War period, somewhat akin to the Navy's first *Norfolk*, a brigantine built in 1798. Though the older *Norfolk* (18 guns) carried more guns than the present *Norfolk* (8 guns), she displaced a mere 200 tons.

—Michael Schofield, SA, USN.



SOME DISH—Size of 'Big Dish' radio telescope being built at Naval Radio Research Sta., Sugar Grove, W. Va., compared with Washington Monument.

SERVICESCOPE

Brief news items about other branches of the armed services.

A PORTABLE LAUGHING GAS FACTORY, producing anaesthesia for use by Army medical units in the field, is now being developed for the use of Army medical units.

The mobile plant can generate 40 pounds of liquid nitrous oxide—commonly known as laughing gas—in an hour. Scheduled to undergo acceptance and engineering tests within a few months, the plant will minimize, if not eliminate, the need to ship compressed gas cylinders to and from various theaters of operation.

The "factory" consists of two skid-mounted units that can be carried by truck, train or plane. The units are comparatively lightweight, yet rugged, and they are simple enough and safe enough to permit operation in the field.

Now in the hands of the Army Engineer Research and Development Laboratories at Fort Belvoir, Va., the plant operates through the conventional decomposition of ammonium nitrate by heat. Ammonium nitrate, which can be shipped to the site in paper bags, is melted in five pots, then passed to five decomposition vessels, and from there to "scrubbers" which remove nitric acid, nitric oxide and trace acids. After that the material passes through other processing units mounted on the second skid, and the resulting liquid nitrous oxide goes to storage cylinders, where it is kept ready for use.

The two skids are connected to one another by a plastic bag. This specially designed item has a capacity of 300 cubic feet, yet it weighs only 30 pounds and can be folded into a small package for storage. The inner envelope is of vinyl plastic sheeting, and the outer casing is of vinyl-impregnated nylon fabric.

★ ★ ★

MILITARY AIR TRANSPORT SERVICE has joined the jet age. Some 7000 MATS passengers crossed the Pacific via MATS jet aircraft from Travis Air Force Base, Calif., to Yokota Air Base, Japan, during November and December 1960.

The jets, which were under a two-month contract to MATS, were scheduled to make 11 trips to Japan each month. Flight time from Travis to Yokota via jet was about 14 hours as compared to 24 hours by conventional aircraft, and the return trip to Travis, about 12 hours as compared to 28 hours by conventional MATS planes.

Each of the jets carried about 160 passengers, or



LONG WAY DOWN—Air Force captain bails out of a balloon gondola on the highest altitude drop in history.

double the load normally carried by conventional aircraft under contract to MATS.

★ ★ ★

A NEW LOGISTIC data and message communications system, thought to be the world's largest, will soon be constructed for the U.S. Air Force. The system, called COMLOGNET (Combat Logistics Network) can handle the equivalent of one hundred million words daily.

Five completely electronic message and circuit switching centers, which will make up the network, will be located at Norton AFB, Calif.; Gentile AFB, Ohio; McClelland AFB, Calif.; Tinker AFB, Okla.; and Andrews AFB, Md. The Norton Center will begin operations in 1961.

The system will handle communications concerning logistics, aircraft movements, air traffic maintenance, passenger information and flight control data. It will work with narrative, data, graphic and digitalized voice information.

The COMLOGNET is completely automatic and has built-in error detection and correction devices.

Compatible with other military communications systems, the network will link some 500 air bases, air stations, depots and civilian suppliers.

★ ★ ★

THE AIR NATIONAL GUARD plans to convert nine squadrons to global transport missions over the next



A NEW PUNCH—Army's airborne SS-11 guided missile, launched from helicopter, streaks toward a moving target.

two years. In the same period it will also equip four squadrons with KC-97s for air refueling tasks, and shift four others to aeromedical evacuation roles.

These scheduled conversions will not affect the overall structure of the ANG-24 wings and 92 flying squadrons. The 17 squadrons selected for new missions will be transferred from air defense, tactical reconnaissance and tactical fighter functions.

When all conversions have been completed, the Air Guard will have 15 long-range air transport squadrons employing heavy four-engine aircraft, and nine aeromedical evacuation units, some of which will also fly four-engine planes.

It will retain 26 air defense squadrons, all equipped with late-model rocket missile-armed aircraft; 21 tactical fighter squadrons; 12 tactical reconnaissance units; four special troop-carrier outfits, and one light transport squadron.

ANG's slated conversions reflect the Air Force's changing requirements and a need for additional airlift. They will enable the ANG to augment the long-range transport capability of MATS, and make it possible for it to assume a portion of the air evacuation mission formerly handled by active duty MATS squadrons.

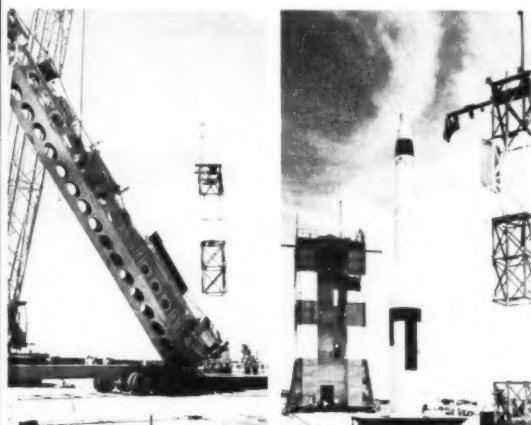
Squadrons scheduled for conversion to long-range transports thus far include the 128th, Marietta, Ga.; 142nd, Wilmington, Del.; 158th, Savannah, Ga.; 185th, Oklahoma City, Okla.; 105th, Nashville, Tenn.; 155th, Memphis, Tenn.; and the 191st, Salt Lake City, Utah. Other selections are to be made later.

The first tanker squadron will be assigned to the Illinois ANG's 108th Squadron based at O'Hare Field, Chicago. Others slated to switch to tanker roles are the 126th, Milwaukee, Wis., and the 103rd, Philadelphia, Pa. A fourth has not yet been selected.

★ ★ ★

A PILL THAT PROMISES to be the most effective anti-malaria drug combination developed so far is now being used by Army troops in Korea. Plans call for the eventual use of the pill by all of the armed services.

The new tablet combines two drugs used separately in the past for malaria prevention—chloroquine and



FULL SCALE model of USAF Minuteman missile checker out launcher for use on trains and ground support.



BACK TO EARTH—Air Force's X-15 research aircraft returns to Edwards AFB, Calif., after high-altitude flight.

primaquine, both developed since World War II.

Since 1951, chloroquine and primaquine have complemented each other in malaria treatment, although they had not previously been taken together in tablet form. Under new treatment procedures, military personnel in malarious areas will take a tablet each week.

Because it is so easy to administer, the new pill (as yet unnamed) is a great improvement over earlier treatment methods. In recent years the standard treatment has been a weekly dose of chloroquine to suppress the symptoms of malaria—recurring chills and fever (caused by malaria parasites in the blood cells of people bitten by malaria-bearing mosquitoes). Then, upon leaving the malarious area, military personnel took primaquine for 14 straight days. Primaquine kills the malaria parasites, which otherwise could dwell for years in the liver and other tissues, causing later relapses of the disease.

Chloroquine, on the other hand, suppresses malaria but does not cure it. Military personnel have used it in malarious areas since the start of the Korean conflict, taking it in doses of one tablet a week without unpleasant side effects. It replaced World War II's atabrine and the traditional quinine, both of which had to be taken daily to suppress malaria symptoms. The older drugs tended to cause headache, nausea and other unpleasant effects.

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A UNIQUE, LIGHTWEIGHT, rocket-powered ejection seat for emergency use in Army vertical take-off and landing research aircraft, is under development.

Present ejection seats enable the pilot to escape safely only when the aircraft is in forward motion or has sufficient altitude for the parachute to open effectively. In contrast, the seat being developed is designed to operate without the necessity for forward speed. It will provide a safe means of escape at any height from ground level to 10,000 feet. The new features make it particularly adaptable to the vertical take-off and landing type of aircraft now under development—aircraft that take off and land like a helicopter and convert in the air to forward flight.

The rocket-propelled seat is equipped with a fully automatic quick-opening parachute. The seat weighs only 68 pounds, which is about half the weight of similar units now being used.

THE WORD

Frank, Authentic Advance Information On Policy — Straight From Headquarters

• **FEBRUARY EXAMS**—If you expect to be advanced in rate as a result of the Navy-wide examination for advancement being held next month, you had better be hitting the books now.

The test for chief petty officer (E-7) will be held on Tuesday, 7 Feb 1961; for E-6 (PO1) on Thursday, 9 Feb 1961; for E-5 (PO2) on Tuesday, 14 Feb 1961; and for E-4 (PO3) on Thursday, 16 Feb 1961.

If you do fail your examination this year, however, or if you pass but are not rated, you will be told by the Naval Examining Center in what subject areas of the examination you were weak, and also in what areas you were strong. It should set you straight for the next time.

The information will be returned to you on an individual examination profile card which will be first sent to your command, and then given to you after the results of the examination have been published.

On the card the subject matter is divided into as many as 16 categories. You are graded from very low to superior in each subject area, which is a comparison grade with others in your same rating.

In this way, you will be able to concentrate in your weak areas, and your command will be better able to evaluate its training program.

Also in February, enginemen (or EN strikers) in pay grades E-3 through E-6, who hold the BuPers-assigned NEC of nuclear powerplant operator, will be allowed to compete for advancement to either EN or MM. Men authorized to compete in

the alternate path of advancement, however, must have completed the required training courses, practical factors, and performance tests for the alternate rating.

Examinations for a new service rating will be held in February. Graduates of the newly established ATW Class "A" School will be allowed to compete for ATW3. Commanding officers may recommend ATW Class "A" School graduates for advancement to ATW3 if they are in all other respects eligible.

Information about the February examination was listed earlier in BuPers Notice 1418 of 17 Nov 1960.

• **SHORTHAND REQUIREMENT FOR YEOMEN**—The shorthand requirement as a performance factor for yeomen is back. Proficiency in shorthand will be a requirement for advancement to yeoman first class beginning with the August 1961 Navy-wide promotion examinations, and for chief yeoman with the February 1962 exams.

The shorthand requirement for YNs was dropped in March 1960. In recent months, however, several major Fleet commanders have cited the critical need for, and lack of, qualified yeoman stenographers—hence the Navy's decision to reestablish stenographic requirements of 60 words per minute for advancement to E-6 and 80 words per minute for E-7.

When the requirement was dropped last year the Navy established an interim Class "C" course to provide stenographers with the ability to take dictation at 120 words

per minute. Since shorthand ability was no longer a requirement, however, it was difficult to fill the school with volunteers.

Either a manual or machine shorthand system will satisfy the requirement. Manual shorthand includes Gregg, Speedwriting, and other systems of brief writing by hand. Machine shorthand means stenography by a key-punch system—Stenomask stenography will not meet the requirement.

• **PRO-PAY FOR MORE NECs**—As a result of a recent ruling by the Department of Defense, petty officers working outside their ratings (E-4 through E-7) who hold Navy Enlisted Classification Codes (NECs) in any of 11 new categories are now eligible to receive pro-pay. Before, only men in three NEC series were eligible.

DOD has ruled that Navymen E-4 through E-7 who hold NECs in the 3300, 9900 and 5300 series, or NECs QM-0221, RD-0313, RD-0315, TM-0771, TM-0752, ET-1581, AO-6852, PH-8135, PH-8136, PH-8141, and are performing duties in these jobs, but whose parent rating is not associated with these duties, are considered to be working in a recognized military skill, and are eligible to compete for proficiency pay in their parent rating.

BuPers Inst. 1430.12B, change transmittal of 20 Oct 1960, which announced these changes, also states that NavPers 624 (Rev. 1-60) should be used for a report of Examination of Advancement or Change of Rating, in place of NavPers 624 (Rev. 2-60).

• **LANGUAGE QUALS**—Qualified linguists, translators or interpreters will no longer have their linguistic abilities reported on their NavPers 500 (Personnel Accounting) card. Instead, those EMs having foreign



ADD THIS to your list of New Year's resolutions . . . Always pass ALL HANDS Magazine on to nine other men.

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language quals will have this information supplied to BuPers in the form of a letter. The letter will contain the following details:

- (1) Name, service number, rate, NECs, branch/class.
- (2) Language qualification, including dialect.
- (3) Degree of proficiency; i.e., linguist, translator or interpreter.
- (4) Statement of how language qualification was acquired.

Enlisted language quals now recorded at BuPers will be furnished active-duty PAMIs (Personnel Accounting Machine Installations) on a quarterly basis.

BuPers Notice 1080, which deals with this subject, also emphasizes that the purpose of acquiring this information is for possible future use — and does not mean that duty assignments will automatically result from it. When the need does arise for personnel with language quals, the information is used, either at the local PAMI, or at BuPers, to locate EMs who are qualified and available.

• FLEET NAVYMEN TO CLASS "A" SCHOOL — Between February and September each year the recruit input into "A" schools doesn't fill all available seats. This leaves room for Fleet personnel.

If you are in pay grades E-2 or E-3, want to attend a Class "A" school, and you meet the following requirements, submit your application to the Chief of Naval Personnel.

You must:

- Meet all school entry requirements listed in the *Catalog of U.S. Naval Training Activities and Courses* (NavPers 91769-D) and *CNATECHTRA Bulletin of Schools and Courses*. You may request a waiver of 10 points on a combined score or five points on a single score on your basic battery tests.

- Have, as required by those two publications, sufficient obligated service at class convening date. Men otherwise eligible may sign a page 1A conditional agreement to extend in yearly increments, or reenlist in order to have required obligated service in exchange for a Class "A" school assignment.

- Include your basic battery test scores and your expiration of active obligated service date on your application.

Before submitting your application, if you plan to make the Navy

a career, you should investigate the STAR program. This plan is further explained in BuPers Inst. 1133.13D.

When applications for these programs reach the Bureau of Naval Personnel, they will be reviewed and the best qualified personnel will be assigned the available quotas.

Complete details on this program may be found in BuPers Inst. 1510.86B.

• LONGER SHORE TOURS DUE SOME RATINGS—If you're in one of 39 different rating or rate categories, and your current shore tour expires on or after 1 Mar 1961, you'll probably be spending from six months to a year longer ashore than you've been counting on.

New and longer shore tour lengths in all or part of 18 ratings have just been announced by BuPers Notice 1306. They supersede instructions contained in chapter seven of the revised edition of the *Enlisted Transfer Manual* (NavPers 15909A) recently distributed to naval activities.

Some exceptions to the lengthened shore tours may be required in order to maintain the necessary personnel flow to Class "B" schools. In the majority of cases, however, the longer tours shown in the table below will be in effect.

A severe shortage of travel funds, a recently-concluded study of sea/shore billet ratios in Group IX and X rates, and a desire to provide a permanent base for increased personnel stability both afloat and ashore all entered into establishment of the longer shore tours.

New tour lengths are:

Rate	Tour Length	
	Old	New
QMC	30	36
NWC	30	36
NW1, 2	24	36
JO3, JOSN	24	36
DM3, DMSN	24	36
MRC	30	36
DCC	30	36
AD3, ADAN	24	36
ATC, 1	30	36
AOC	30	36
AO1	24	36
YN3, YNSN	24	36
PN3, PNSN	24	36
AEC	30	36
AE1, 2	24	36
AQC, 1, 2	24	36
AMC, 1, 2	30	36
AM3, AMAN	24	36
PRC	36	42
PR1, 2	30	36
PR3, PRAN	24	36
AK3, AKAN	24	36
HM2	30	36

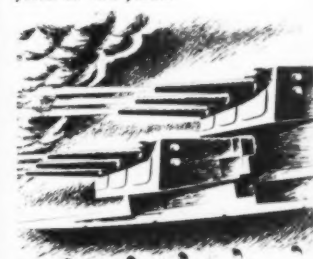
QUIZ AWEIGH

Try this Navy quiz on for size. Sure as shooting it'll be a cinch, if you know your guns.

1. Familiar to all is the small-arms weapon shown below. The great majority of these weapons in use today are officially designated as (a) Side Arm, Caliber .45 M1917 (b) U. S. Pistol, Caliber .45 M1911A1 (c) Pistol, Caliber .38 M1941-A.



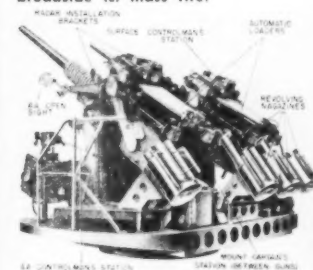
2. Maximum effective range of this weapon is (according to the *Landing Party Manual*) (a) 50 yards (b) 100 yards (c) 150 yards.



3. Blazing away in the above drawing are the guns of a large combatant ship. The structures that support each set of guns should be readily recognized as being (a) mounts (b) gun-houses (c) turrets.

(a) mounts (b) gun-houses (c) turrets.

4. The action shown here would best be described as (a) salvo (b) broadside (c) mass fire.



5. This business-like piece of ordnance is a key weapon on many types of ship. You don't have to look at it very hard to see that it is a "twin so and so" rather than a "single such and such." But you'll have to study it more closely to determine if the caliber is (a) 40mm (b) 3-inch (c) 5-inch.

Answers to Quiz Aweigh on p. 57.

THE BULLETIN BOARD

What Do You Know about OC, AOC and NAOC? Check the Facts

IF YOU'RE A COLLEGE GRADUATE ON active duty with the Navy, and you're interested in becoming a commissioned officer, this article is for you. It outlines the different officer candidate programs offering commissions in a variety of fields, one or more of which may be the right one for you.

In general, these programs fall into three categories—the Officer Candidate (OC), the Aviation Officer Candidate (AOC 1395) and the Naval Aviation Officer Candidate (NAOC 1355) programs.

The *Officer Candidate (OC)* program provides a course of training for selected college graduates leading to a commission as a Reserve Officer in the line, restricted line, or staff corps of the U.S. Navy. Selected enlisted applicants are designated as officer candidates within their present pay grades, but not lower than E-2.

The *Aviation Officer Candidate (AOC 1395)* program is geared for selected college graduates who meet the requirements for flight training. Selected enlisted applicants are designated as Aviation Officer Candidates within their present pay grades, but not lower than E-2. AOCs who successfully complete the four-month officer indoctrination course, if qualified, are commissioned as Reserve officers and, upon successful completion of flight training, are designated Naval Aviators.

The *Naval Aviation Officer Candidate (NAOC 1355)* program provides training for selected college graduates who meet the requirements for a Reserve commission in the line within the aviation billet structure. Purpose of this program is to prepare aviation officers as Naval Aviation Observers (NAO), or for weapons systems, air intelligence and maintenance billets in the categories of Radar Intercept Operator, Bombardier, Navigator, Bombardier/Navigator, Airborne Early Warning, Antisubmarine Warfare, E.C.M. Evaluation, Maintenance, Electronics Maintenance or Ordnance. Selected enlisted applicants are designated NAOC 1355 within their

present pay grade, but not lower than E-2. Candidates who successfully complete the four-month officer indoctrination, if qualified, are commissioned as Reserve officers.

Basic eligibility requirements for all phases of the programs are the same. To qualify, you must:

- Be a citizen of the United States. (Applicants for naval intelligence, air intelligence photographic intelligence or naval security group duties must be citizens by birth.)
- Be a graduate of an accredited college or university with a bachelor's degree.

• Be physically qualified in accordance with standards contained in the Manual of the Medical Department.

• Be on active duty at a permanent duty station where you have been serving for at least two months. (Naval Training Centers for recruits and service schools two months or more in duration are considered permanent duty stations for these programs.)

Exception: This requirement does not apply to Naval Reservists whose applications were being processed at the time they were ordered from inactive duty to a training center for active duty. OIC's of Naval Recruiting Stations will forward these application files to the training center for completion and forwarding to the Chief of Naval Personnel. (Na-

val Reservists who are ordered to a duty station other than a training center while applications are in process are advised to reapply.)

• Have at least six months of obligated service remaining under current enlistment upon receipt of orders to school. If you have less than six months remaining, you are authorized to extend or re-extend your enlistment, but the agreement to extend must be executed before you are transferred to the school.

Here is a rundown on the various programs and categories within these programs:

Officer Candidate School (OC)— (For male applicants)

Line—1105; *Restricted Line*—1405, 1455, 1515, 1535, 1615, 1625, 1635, 1655; *Staff Corps*—2305, 3105, 5105.

Successful candidates become Ensigns in the line, restricted line and staff corps, with a very limited number of LTJG commissions available in the restricted line and Civil Engineer Corps.

If you are selected you are ordered to report to the U.S. Naval Schools Command, Newport, R.I., for a four-month indoctrination course. (An exception—if you are selected for Aviation Experimental Psychology you will receive your indoctrination at NAS Pensacola.)

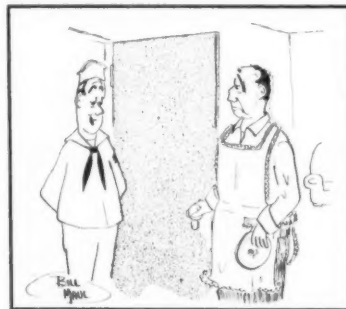
Line officers are ordered to appropriate billets. Staff corps and restricted line officers are given additional training under the supervision of the cognizant bureau or office.

If you are processed at a naval training center, you are required to take the Officer Qualification Test (OQT). Minimum qualifying scores are:

Category	Score
1105, 3105, 1625	40
2305	40
1405, 1455, 1515	48
1615, 1635, 1655, 5105	50

Applicants who have not taken the OQT must have a GCT of at least 63 to be eligible. (Note: Applications from extremely well motivated candidates who fail to attain minimum OQT or GCT scores may be processed if, in the opinion of the

All-Navy Cartoon Contest W. R. Maul, CT1, USN



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CO, the applicant is outstanding in other respects.)

You are required to serve on active duty in commissioned grade for three years from the date you accept your appointment, if required by the needs of the service, and to retain your commission in the Naval Reserve for a total of six years following the date of your original appointment.

You must be in the 19-27 age group at time of submission of application in order to be eligible for a commission as Ensign. For LTJG, limits are 27-33 for restricted line, and 21-33 for the Civil Engineering Corps. Prior active military service may be used to adjust the limit on a month-to-month basis, up to a maximum of 36 months.

Additional special requirements:

Restricted Line—Only the applications of men not physically qualified for line will be considered for 1615, 1635 and 1655. If you are physically qualified for line, you may be considered for 1405, 1455 and 1625, but you should indicate line as an alternate choice.

Engineering duty officer — 1405: Candidate must have a baccalaureate in mechanical, electrical, chemical, metallurgical, petroleum or industrial engineering; or a degree in physics; or a degree in applied mathematics; or a degree in naval architecture or marine engineering from M.I.T., Webb Institute, or the University of Michigan.

Engineering duty officer (Ordinance Engineering) — 1455: Candidate must have a baccalaureate in mechanical, electrical, chemical, metallurgical or industrial engineering; or a degree in physics; or a degree in applied mathematics.

Aeronautical Engineering Duty Officer — 1515: Candidate must have a baccalaureate in aeronautical engineering, mechanical engineering, or a related specialty such as internal combustion engines or aircraft power plants; or a degree in electrical or radio engineering or associated specialty with a major in electronics. Although not a requirement, experience in an engineering capacity associated with aircraft maintenance or internal combustion engines is desirable.

Aeronautical Engineering Duty Officer (Aerological Engineering) — 1535: Applicant must have a bac-

calaureate in any field of engineering, chemistry, physics or mathematics, with one year (30 semester hours) of postgraduate work in aerological engineering; or, a degree with a major in meteorology. Although not a requirement, previous employment in a meteorological capacity is desirable. If you have civilian or military experience in meteorology you may substitute each year of such experience for five se-

mester hours of postgraduate work in aerological engineering.

Special Duty Officer specializing in communications (Naval Security Group Program) — 1615: Must be a citizen of the U.S. by birth, with no questionable foreign connections by marriage, family or otherwise. Applicants with educational and or professional experience in mathematics, history, economic geography, electronics, physics, foreign languages

WHAT'S IN A NAME

Submarine Dolphins

A high point in the career of many a Navyman occurs when he becomes a qualified submariner. At that time he is authorized to wear dolphins.

The correct name for the dolphins is submarine insignie. It is one of the items of uniform included under the category of breast insignia, including naval aviator, aviation observer and parachutist insignia, among others.

The submarine insignia came into use in the Navy nearly 37 years ago. It was on 13 Jun 1923 that the commander of a New London-based submarine division took the first official steps—by way of an official recommendation. That officer was Captain Ernest Joseph King, USN, who later became Commander-in-Chief U.S. Fleet and Chief of Naval Operations.

Captain King recommended that a distinguishing device be adopted for qualified submariners, both officers and enlisted men. With his recommendation he submitted a pen-and-ink sketch of his own. The sketch showed a shield mounted on the beam ends of a submarine, with dolphins forward of, and abaft, the conning tower. The recommendation was strongly endorsed by Commander, Submarine Divisions, Atlantic Fleet, the following day and sent on to the Chief of the old Bureau of Navigation.



Over the next several months the Bureau solicited additional designs from various sources. Several were submitted. Some combined a submarine-and-shark motif. Some showed submarines and dolphins. Some used a shield design.

On 20 Mar 1924 the Chief of BuNav recommended to the Secretary of the Navy that the dolphin design be adopted. A few days later the recommendation was accepted by Theodore Roosevelt, Jr., Acting SecNav.

The final design shows the bow view of a submarine proceeding on the surface of the sea. Her bow planes are rigged for diving. Flanking the submarine are stylized dolphins in horizontal position with their heads resting on the upper edge of the bow planes.

As with other breast insignia (and enlisted distinguishing marks), qualifications are outlined in the BuPers Manual, while the method of wearing, a description of the design and an illustration of the design are to be found in Uniform Regulations.

The submarine insignia in the early days were awarded only to those officers qualified for submarine command. Later the criteria became "Qualified in submarines." Also in the early days, the insignia were worn (both by officers and enlisted men) only when attached to submarines or submarine organizations. Under current directives however, once qualified, the insignia may be worn regardless of the duty being performed.

As first authorized, the insignie for officers was a bronze, gold-plated metal pin. Later, both a gold embroidered insignie and a gold-color metal pin became authorized.

Today enlisted submariners may wear either a silver-color metal pin or an embroidered dolphin. The latter is either white or blue, depending on the uniform worn.

Originally, the embroidered insignie was worn on an enlisted man's right sleeve, midway between the wrist and elbow. Today it is worn on the left breast.

When Did You Last Check Your Record of Emergency Data?

It's that time again—time to check the DD Form 93-1 in your service record.

If you're like most of us you're no doubt blithely convinced that it will always be the other guy who'll step in front of the wrong taxi, or catch the plane that doesn't make it—that it can't happen to you.

Unappealing as the prospect may be, however, it's well to consider that it can happen to you—perhaps tomorrow—and to consider, too, what effect such a sudden catastrophe might have on those you leave behind if you've failed to keep your Record of Emergency Data page up to date.

The DD Form 93-1 is, with the possible exception of the enlistment contract, the most important page in your service record—and you are responsible for seeing that it's kept current and correct. It is used by both your CO and the Chief of Naval Personnel if you become seriously ill or injured, or if you die or are reported missing, as the basis for:

Person to be notified in the event of an emergency; names and addresses of your spouse and parents; names, addresses and ages of your children; identity of any persons you do not want notified because

of ill health (a heart condition, for instance), age or other reasons; the beneficiary for death gratuity if you are not survived by a spouse or children; names of the beneficiary or beneficiaries you want to receive any money due and unpaid to you from the Navy at the time of your death, including your savings deposits; name of the person you want to receive a percentage of your pay in the event you are missing and unable to transmit funds; name and address of any insurance companies with whom you have policies in force, so that they may be furnished certifications of casualty; names of those who are in fact receiving more than 50 per cent of their support from you.

If your DD Form 93-1 is not current and accurate, notification of the persons who should receive emergency information could be delayed, quite possibly with tragic results. Immediate payment of the death gratuity might be made to a person not legally entitled to it, or, if no widow or children survive, to someone other than the person of your choice. Settlement of unpaid pay and allowances might be made to other than your current (and intended) next of kin. If you became missing, your funds might

not be handled according to your desires.

The Personal Affairs Division of BuPers spends a good deal of its time wading through the mess caused by incomplete and/or inaccurate information contained in DD 93-1 Forms. It could quote you chapter and verse from hundreds of cases where needless heart-break, embarrassment, delay and actual suffering resulted.

When a man is married, one of his first steps logically is to make his wife his number one beneficiary in case something happens to him—yet many Navymen never get around to changing their DD Form 93-1 to insure this. Again, if you have children, you'd certainly want them to be your beneficiaries if both you and your wife died—but again many Navymen forget to list new additions to the family on their DD Form 93-1.

Births, deaths, marriage, divorce, remarriage, change of address—these are just some of the items which can make the Record of Emergency Data sheet out of date, no matter how recently you've filled one out. So if any changes have affected your particular situation, see your Personnel Office—it's time for a change.

or political science are desired.

Special Duty Officer specializing in Law—1625: Must hold a law degree from a law school accredited by the American Bar Association. Must be a member of the bar of a federal court, or the highest court of a state or the District of Columbia. (You may apply without being such a member, but you must be a member before your original commissioning.)

If you are a Law Specialist (1625) applicant, you may, if qualified, request consideration for law specialist as first preference on the designator preference statement. You will be given initial consideration for law specialist, and, if selected, will be enrolled as a 1625 officer candidate. Upon successful completion of OCS, you will be appointed law specialist in the grade of LTJG.

Special Duty Officer specializing in Naval Intelligence—1635: Must be a citizen of the U.S. by birth,

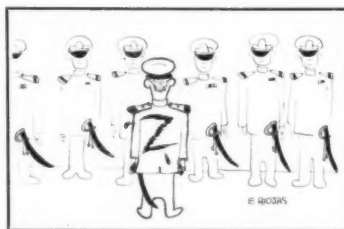
with no questionable foreign connections by marriage, family or otherwise. Applicants are desired who have educational and or professional backgrounds in one or more of the following fields: archeology; architecture; broad contact experience; broad executive and administrative experience; business administration; cartography; economics; extensive travel and/or residence in a foreign country; foreign languages

(good knowledge of at least one); hydrography; industrial engineering; investigation (particularly experience with federal and state agencies); journalism; law; photogrammetry; photography and mapping; physical and/or natural sciences; political science; public relations; research and analysis fields; shipping and transportation; teaching; or technical or scientific fields.

Special Duty Officers specializing in Public Information—1655: Applicants are desired who have professional experience, either civilian or military, in the field of mass communications such as public relations, newspapers, magazines, books, trade publications, radio, television, advertising, public events promotion, public opinion surveys, motion picture or still photography, or instructing in any of the above.

Supply Corps Officer—3105: Must have a bachelor's degree.

All-Navy Cartoon Contest
E. Riojas, HM1, USN



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Civil Engineer Corps Officer — 5105: Must have a bachelor's degree in civil, mechanical, electrical, mining or architectural engineering, or architecture.

If you would qualify for consideration for an initial commission in the grade of LTJG, you must meet additional requirements. In the case of restricted line you must possess a master's degree or doctorate, or a baccalaureate and have three years of professional experience in your specialty. For the Civil Engineer Corps, you must have had three years of professional experience in a field considered to be of special value to the Navy.

Years of graduate engineering study in an accredited college or university are evaluated as engineering experience. Each year of active military experience directly related to the applicant's engineering specialty may be counted as one year. Each year of civilian experience in a field directly related to civil engineering may be counted as one year.

Officer Candidate School (OC)— (Men and Women)

Medical Service Corps—2305: Includes the pharmacy and optometry sections; the medical allied sciences: bacteriology; biochemistry; biophysics; chemistry; entomology; hematology; industrial hygiene; microbiology; parasitology; pharmacology; physics; physiology; psychology (clinical); psychology (experimental); public health; radiobiology; radiochemistry; radiophysics; serology, and virology; and the women's Specialist section—dietitians, occupational therapists and physical therapists.

If you are processed at a naval training center, you must take the OQT or WOQT Form 7W (Women), and attain a minimum qualifying score of 40. Those who have not taken the OQT must have a minimum GCT of 63 to be eligible. However, the minimum OQT, WOQT or GCT scores can be waived if the CO feels the applicant is outstanding in other respects.

If you apply for a commission as an Ensign you must be at least 21 and under 31 and one-half years old at the time of submission of application, while aspirants for consideration for appointment at LTJG

must be in the 21-33 age group. Prior military service may be counted on a month-for-month basis up to a maximum of 36 months.

Pharmacy—Must be a graduate of an accredited college or university

with a major (30 semester hours) in pharmacy, or must have earned a master's degree in pharmacy. Must submit evidence of registration as a pharmacist by one of the states or the District of Columbia.

WAY BACK WHEN

Pioneer in Steam Engineering

Back in the days when the Navy was still using sailing ships, a forceful Navyman became steamed up over the idea that there was a better way of getting there fastest with the mostest. His name was Ben Isherwood and he played a prominent role in advancing steam engineering in the Navy.

Benjamin Franklin Isherwood was born in New York City on 6 Oct 1822. He began his training as an engineer for a railroad company when he was about 14 years old. Some time later, he left that job and worked for a time in a civil engineer's office, but then returned to a railroad job. This time he worked under Charles B. Stuart, a man who later became Engineer-in-Chief of the Navy.

After this, Isherwood worked for the U.S. Treasury Department as a lighthouse construction engineer. While working there he designed a new type of lighthouse lens which was adopted for use. He was later sent to France to supervise the manufacture of these lenses.

In 1844, at the age of 22, Isherwood became one of the original group of men appointed to the Engineer Corps of the U.S. Navy.

During his early years in the Navy, he served in several Navy ships including *Princeton*, the U.S. Navy's first screw-propeller ship. In 1848, he was promoted to the rank of chief engineer and in 1852, he was transferred to Washington, D.C. His most notable achievement during a one-year tour there was a feathering paddlewheel for the *Water Witch*, which he designed—the first such paddlewheel used in the U.S. Navy. (The floats or buckets of a feathering paddlewheel move on an axis

and enter and leave the water edge first. The broadside of the float acts when fully submerged.)

From Washington, he again went to sea aboard *San Jacinto* for four years. He then returned to Washington, D. C., in 1859 where he directed the designing of a class of gunboats for the Russian government.

Also in 1859, Isherwood published a two-volume work, "Engineering Precedents," which discussed the distribution and losses of energy in engines and boilers. The conclusions drawn in his book were a result of his studies during practical operating conditions during his 12 years in the Navy.

Most of his fame, however, came from another two-volume work which he published in 1863 and 1865. Entitled "Experimental Researches in Steam Engineering," the books were translated into six foreign languages and became a standard engineering text throughout the world.

In 1861, Admiral Isherwood was appointed Engineer-in-Chief of the Navy and in 1862 he became the first Chief of the Bureau of Steam Engineering—a job he kept for eight years.

When the Civil War began, the U.S. Navy had only 28 steam-driven ships. To build up the U.S. Navy, Admiral Isherwood personally directed the design and construction of the machinery for U.S. Navy ships. By the end of the war, the Navy had some 600 steam-driven ships.

One ship in particular, *Wampanoag*, is credited to Isherwood's ingenuity. Besides designing the machinery, he also suggested the principal dimensions of the hull. When finished, the ship attained a speed of 17.75 knots—a speed considered nearly impossible at that time.

After his tour as Chief of the Bureau of Steam Engineering, Isherwood spent his remaining years in the Navy studying foreign navies and naval bases. He also directed a great deal of research.

Admiral Isherwood retired from the U.S. Navy on 6 Jun 1884, and after 31 years on the retired list, died in New York City. He held the relative rank of Rear Admiral.

Since his death on 19 June 1915, Admiral Isherwood has been immortalized in the U.S. Navy. The steam engineering building at the U.S. Naval Academy has been named Isherwood Hall and two Navy destroyers, DD 284, succeeded by DD 520, have been named in his memory.



Optometry—Must be a graduate of an accredited college or university with a major (30 semester hours) in optometry, or must have earned a master's degree in optometry or doctor of optometry degree (OD). Must submit evidence of registration as an optometrist by one of the states or the District of Columbia.

Medical Allied Sciences — Must have at least a bachelor's degree from an accredited college or university.

To apply for a commission in the specialty of experimental psychology you must have, in addition to the B.A., a minimum of 30 semester hours of graduate work in or relating to that specialty.

Dietitians—Must have a bachelor's degree from an accredited college or university with a major in foods and nutrition or institutional management, and must have completed a dietetic internship. Three years of experience, one of which must have been at hospitals, may be substituted for internship, provided this experience includes diet therapy, adequate menu, food preparation and service planning, food cost control, food supplies and equipment handling.

Occupational Therapists—Must be graduates of an accredited college or university with a bachelor's degree, or must be graduate nurses. In addition, must have completed an occupational therapy training course in one of the schools accredited by the Council on Medical Education and Hospitals of the American Medical Association.

Physical Therapists—Must have a bachelor's degree from an accredited college or university with a major in physical education or the biological sciences, or must be graduate nurses. In addition, must have completed a training course for physical therapists in one of the schools accredited by the Council on Medical Education and Hospitals of the American Medical Association.

To be eligible for appointment as LTJG in any of the above fields you must hold a doctorate in your specialty.

Officer Candidate School (OC)—(Women)

Line — 1105; Staff Corps — 3105

In addition to the basic eligibility requirements listed at the beginning of this article, you must complete

All-Navy Cartoon Contest
LT B. E. Lodge, USN



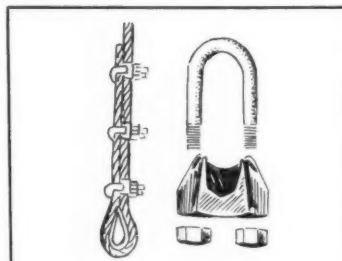
"The story is told with the hands?—
No wonder I didn't get it."

WOQT Form Seven if your application is processed at a naval training center. If you have not taken the WOQT, you must have a minimum GCT score of 63. Minimum qualifying score on the WOQT is 40. However, candidates who do not achieve the minimum WOQT or GCT scores may still have their applications processed if, in the opinion of the CO, they are outstanding in other respects.

You must be at least 20 and under 27 and one-half at time of appointment to Ensign, and under 33 and one-half at time of appointment as LTJG. Age may be adjusted on a month-for-month basis for previous active military duty performed, up to a maximum of 36 months.

Classes for the OC (Women) program convene in July, November and March of each year. Deadline dates for receipt of applications in this Bureau are 10 May, 10 September and 10 January. Applications received after deadline dates are

Grains of Salt—



ATTACHING WIRE CLIPS

automatically considered for the next class.

Aviation Officer Candidate (AOC 1395)

If your application is processed at a naval training center you will be given the OQT. No minimum qualifying score is required. However, if you score 34 or lower you may be rejected in the field.

You must attain a minimum grade of three on the Aviation Qualification Test (AQT), and a minimum grade of five in the Flight Aptitude Rating (FAR). You must be at least 19 and under 26 at the time you submit your application.

In addition you must be strongly motivated to fly and must be physically qualified and aeronautically adapted for the actual control of aircraft in accordance with the requirements of the Manual of the Medical Department.

You will be examined by a board of three or more officers, and also by your commanding officer, concerning your education, aptitude for military life and motivation for flight training.

If recommended you will be given a preliminary physical examination if your activity doesn't have a flight surgeon. If you meet the basic physical requirements for flight training, you will be ordered to the nearest activity having a flight surgeon, where you will take a flight physical and the aviation aptitude examinations—AQT and FAR.

Waivers of physical defects will not be granted—if you are found not physically qualified for duty involving flying and the actual control of aircraft, your application will not be forwarded for further consideration.

Naval Aviation Officer Candidate (AOC 1355)

Applications from those with a degree in engineering, electrical electronics engineering and mathematics background are particularly desired.

If you have listed OCS as a second choice you will be administered the OQT, but no minimum score is required except in the cases of applicants for 1355 Air Intelligence and 1355 Aerological duties. However, if you score 34 or less you may be rejected in the field.

You must make a grade of three or more on the AQT. You will also be given the FAR, but no minimum

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grade is required. In addition you must be at least 19 and no more than 27 and one-half at time of appointment (age may be adjusted on a month-for-month basis for previous active military duty performed up to a maximum of 36 months) and you must be motivated for aviation duty and be intellectually capable of learning the technical aspects of operation and/or maintenance of the equipment involved.

Aerological duties - 1355: Must have a degree in meteorology, and must score 40 or better on the OQT.

Air Intelligence-1355: Must score 45 or better on the OQT, and must meet the special requirements listed earlier in this article under 1635 Naval Intelligence.

Successful woman candidates are ordered to the U.S. Naval School, Officer, Women, at Newport, R. I., for eight weeks of OCS. Those commissioned in the line get an additional eight-week officer training course and then are ordered to line billets at shore activities, while those commissioned in the staff corps get an additional eight-week officer training course and staff corps training under the supervision of the cognizant bureaus before going to an appropriate billet at a shore activity.

OAC 1395 candidates get four months' indoctrination and preflight training at NAS Pensacola, and, upon appointment, 14 months of flight training leading to designation as a Naval Aviator. NAOC 1355 candidates get the four months' indoctrination at Pensacola followed by six to eight months of additional training in the specialty for which selected.

List of New Motion Pictures Scheduled for Distribution To Ships and Overseas Bases

The latest list of 16-mm feature movies available from the Navy Motion Picture Service, Bldg. 311, Naval Base, Brooklyn 1, N. Y. is published here for the convenience of ships and overseas bases. The title of each picture is followed by the program number.

Those in color are designated by (C) and those in wide-screen processes by (WS). Distribution of these motion pictures to the Fleet began in November.

Michael Strogoff (1611) (C)

(WS): Melodrama; Curt Jurgens, Carmine Callone.

Dinosaur (1612) (C) (WS): Melodrama; Ward Ramsey, Paul Lukather.

Battle of the Sexes (1613): Comedy; Peter Sellers, Robert Morley.

Pretty Boy Floyd (1614): Melodrama; John Ericson, Barry Newman.

From the Terrace (1615) (C) (WS): Drama; Paul Newman, Joanne Woodward.

Hercules Unchained (1616) (C) (WS): Melodrama; Steve Reeves, Joseph E. Levine.

Why Must I Die (1617): Melodrama; Terry Moore, Debra Paget.

Elmer Gantry (1618) (C): Drama; Burt Lancaster, Jean Simmons.

Psycho (1619): Melodrama; Anthony Perkins, Janet Leigh.

Hannibal (1620) (C) (WS): Drama; Victor Mature, Rita Gam.

Chartreuse Caboose (1621) (C) (WS): Drama; Molly Bee, Ben Cooper.

Tarzan, The Magnificent (1622) (C): Melodrama; Gordon Scott, Betta St. John.

Ice Palace (1623) (C): Drama; Richard Burton, Robert Ryan.

Young Jesse James (1624) (WS): Western; Ray Stricklyn, Willard Parker.

Village of the Damned (1625): Drama; George Sanders, Barbara Shelley.

College Confidential (1626): Drama; Steve Allen, Jayne Meadows.

Strangers When We Meet (1627)

(C) (WS): Drama; Kirk Douglas, Kim Novak.

Murder Inc. (1628) (WS): Melodrama; Stuart Whitman, May Britt.

The Bellboy (1629): Comedy; Jerry Lewis, Alex Gerry.

Hell to Eternity (1630): Melodrama; Jeffrey Hunter, D. Janssen.

Naval Postgraduate School Offers General Line Course

If you're a Navy line officer with from three to seven years of commissioned service, and you're interested in preparing yourself for more responsible duties and higher grade, the General Line Course at the General Line and Naval Science School, U. S. Naval Postgraduate School, Monterey, Calif., is for you.

A nine-and-a-half month course totaling 774 classroom and laboratory hours in the naval-professional area, the General Line Course is intended to raise the educational level, broaden the mental outlook, and increase the professional and scientific knowledge of line officers to prepare them for more responsible duties with the operating forces.

You will normally not be considered available for the program until you have completed a normal sea-duty tour after commissioning. You may indicate your desire to attend the school on the Officer Preference and Personal Information Card (NavPers-2774, New 1-60). However, this is not imperative, since if you are eligible you will be automatically considered for attendance whenever available.

Priority consideration for assignment to the course is given first to officers commissioned without having had midshipman training and who have not received any previous postgraduate instruction; then to those officers commissioned without midshipman training who have received previous post-graduate instruction; and finally to officers who received midshipman training.

If you enroll in the program you must take each of the courses offered, or establish your qualifications for exemptions. In addition, you may be allowed to take some academic courses offered in the Bachelor of Science/Bachelor of Arts Programs (outlined in BuPers Inst. 1520.48 series), if you have the prerequisites and scheduling permits.

All-Navy Cartoon Contest
H. P. Wood, CMA3, USNR



"I'll teach you to heave the lead if it takes me all d..."

Temporary and Reserve Officers May Request Transfer to USN

OUTSTANDING JUNIOR OFFICERS who now hold a Reserve commission or a temporary commission in the Regular Navy have a good chance to become permanently commissioned Regular Navy officers, if they so desire.

This plan, called the Regular Navy Augmentation Program, is a continuing one which is designed to increase the over-all number of USN officers and to alleviate the shortage of officers in certain year groups. Under the program, which is explained by BuPers Inst. 1120.12H, certain Reserve (on active or inactive duty) or temporary Regular Navy officers from the rank of ensign through lieutenant commander may be considered for appointment as Regular Navy officers. In no case will an officer be appointed to a lesser rank than he holds as a Reserve officer or temporary USN officer.

BuPers Inst. 1120.12H does not apply to Medical and Dental Corps officers or those officers with designators 14XX, 15XX, and 16XX, except 1625 (law). Medical and Dental officers should apply under BuPers Inst. 1120.3F and officers with designators 14XX, 15XX, and 16XX, except 1625 (law), should apply under a separate instruction in the 1120 series which will soon be issued.

If you're interested in seeking a permanent Regular Navy commission, but you're not sure of the details, this rundown will give you an idea of what the program is all about.

Eligible male applicants are:

- Line (110X and 13XX) officers with, or junior to, lineal number 23376-28 (as per NavPers 15018 of 1 Jan 1960).
- Medical Service Corps (230X) officers not senior to a lieutenant with a date of rank of 1 Aug 1955.
- Chaplain Corps (410X) officers not senior to a lieutenant with date of rank of 1 Jul 1957.
- Supply Corps (310X) and Civil Engineer Corps (510X) officers not senior to a lieutenant commander with a date of rank of 1 Aug 1959.
- Temporary limited duty officers not above the grade of lieutenant (for appointment in the unrestricted line or staff corps for which they qualify).

Applications for transfer to the re-

stricted line as Special Duty Officers (law) (designator 1620) are particularly desired from qualified Reserve officers with at least one-and-one-half years' sea experience who are not above the grade of lieutenant with a date of rank of 2 Jul 1955 or later.

Eligible women applicants are:

- Line (110X) and Supply Corps (310X) officers not above the grade of lieutenant.
- Medical Service Corps (230X) officers not above the grade of a lieutenant with a date of rank of 1 Aug 1955.
- Nurse Corps (290X) officers not above the grade of lieutenant commander (temporary) with, or junior to, lineal number 23525-20 (as per NavPers 15018 of 1 Jan 1960).

Other requirements are as follows:

- *Citizenship*—All applicants must be U.S. citizens.
- *Service and Active Duty*—All male officers and women of the Nurse Corps must have completed 12 months of active commissioned service and be serving in the grades already indicated. In computing this time, training periods at naval schools, flight training or any other duty under instruction for more than 30 days will be excluded. This is to make sure the applicant's performance in his primary duties has been observed and evaluated for at least one year.

Applications from women officers (110X, 230X, 310X) may be submitted at any time, but anyone selected must serve on active duty for at least six months before she can

receive her USN appointment.

Officers who have been released to inactive duty are also eligible. Reserve officers undergoing flight training cannot put in for the program unless they have had at least 12 months' active service as a naval aviator.

• *Dependents*—A woman officer is not eligible if she: Is the natural or adoptive parent of a child under 18; has personal custody of a child under 18; is the step-parent of a child under 18 who lives within her household for more than 30 days a year; is pregnant; or is the mother of a child under 18 for whom she has not lost all rights of custody and control through formal adoption proceedings.

There are no dependents restrictions for male officers.

• *Education*—For line and supply corps officers there are no formal educational requirements. However, since you will have to compete against your Regular Navy contemporaries for promotion and assignment, you should be about the same age as they are and have about the same education.

Applicants for the Medical Service Corps (2300) (all sections) must meet the educational requirements for original appointment in specialty and/or section of the Medical Service Corps.

A Chaplain Corps (4100) applicant must be a graduate of an approved school of theology, or have completed at least 90 semester hours (three years) of graduate work in a school of theology. He must also have completed at least 120 semester hours of undergraduate work besides the 90 hours mentioned above. No duplication of credits is permitted.

Civil Engineer Corps (5100) applicants must have at least a baccalaureate in civil engineering, mechanical engineering, electrical engineering, architectural engineering or architecture, mining engineering, petroleum engineering, electronic engineering, nuclear engineering, chemical engineering or construction engineering. Applicants who have engineering degrees other than these, will be considered on an individual basis. The degree must have been received from an accredited school listed by the Engineers Council for Professional Development.

All-Navy Cartoon Contest
George Sena, BMU1, USN



"How's that for stopping on a dime, sir?"

Nurse Corps (2900) applicants must be high school graduates and registered nurses.

To apply for appointment as a Special Duty Officer (law) (1620), you must hold a degree from a law school accredited by the American Bar Association and be a member of the bar of a Federal Court or the highest court of a state, a territory or the District of Columbia.

- **Age**—Men recommended for appointment must be young enough to complete a total of 20 years of active service before they reach the age of 62. Nurse Corps officers must meet the 20-year requirement by the time they are 55, and other women officers, by the time they are 50. Those who would be eligible for retirement within three years of appointment will not be accepted.

- **Physical Requirements**—All applicants must meet physical standards appropriate to their grade, as established by the Chief of the Bureau of Medicine and Surgery. Minor defects, which do not interfere with satisfactory performance of duty, will not be considered disqualifying.

Applicants recommended for appointment in the Regular Navy will normally be designated in the status for which they made application. However, limited duty officers will be considered for appointment to the unrestricted line (1100 and 1350) or staff corps categories for which they may qualify, and officers whose specialty is clinical or experimental psychology may be considered for appointment in the Medical Service Corps (2300).

Except for Special Duty (law) (1620) officers, those recommended for transfer will be assigned positions on the appropriate lineal list according to date of rank in the grade in which they are serving at the time of transfer and will be permanently appointed accordingly. Officers permanently appointed in grades lower than the ones in which they are serving will be temporarily reappointed in the appropriate higher grade. However, no permanent appointment will be made above the grade of lieutenant.

If you are selected for transfer as Special Duty Officer (law) (1620), your lineal position will be adjusted to the one you could hold if you had received three years' constructive credit computed from the date you

established your qualifications as a law specialist or the date of your first commissioning, whichever is later.

Applications for the augmentation program are considered by a board which meets each quarter. The board is convened by the Secretary of the Navy and the results of the board's action are published in individual letters to the officers concerned.

If an officer is not selected under this program, he sometimes writes the Chief of Naval Personnel requesting information which will help him prepare himself for a later board. Since the selection board does not keep a record of its deliberations, however, it is not possible to give specific reasons for anyone not being selected.

But, here are some general answers to questions most often asked

by the officers concerned:

What are the criteria for selection?—When comparing applicants, the board considers the performance of duty, service experience, motivation, physical risk classification, assignability and educational qualifications. The officers recommended for augmentation are those who, in the opinion of the board members, are the best qualified and appear to possess the potential to grow with the Navy's complex technological progress. These officers should, therefore, be able to compete successfully with their Regular Navy contemporaries.

Is a college degree required for augmentation?—As already mentioned, there is no formal educational requirement for the unrestricted line or Supply Corps. During fiscal year 1960, for example, 549 officers were

HOW DID IT START

Lucky Bag

If you leave personal gear adrift in the living compartment, it may end up in the "Lucky Bag." You may get the clothing back if you want it, otherwise it will be sold at auction at some later time.

One chief master-at-arms told us, "We generally let the boys sweat out their loss for a few days and then return their gear. Repeated offenders may be taken to mast."

For men undergoing recruit training, to leave clothing adrift may also lead to some kind of admonishment. Usually a recruit who is guilty of this receives a certain number of demerits for each item of clothing found. Many senior Navymen may remember some extra duty performed during recruit training because of an item of personal gear which ended up in the Lucky Bag. Unless the demerits build up, today's recruit probably would get no punishment.

Many years ago, whether or not you were lucky to have your personal gear found would seem to be a matter of opinion. In those days, any article found adrift in the living compartments was placed in a bag called the Lucky Bag. Once a month, so we read in a book about a cruise of the old USS Columbia back in 1838, the bag was brought to mainmast. The owners of the articles would get them back. But, unlike today's Navymen, those sailors would receive several lashes to remind them not to be careless in the future.

It appears that the Lucky Bag idea came from the Royal Navy, but the name is all American. Perhaps it was named by an

MAA with a heavy sense of humor, or possibly in the early Navy when money was scarce, you were lucky if your gear was found and could be returned to you.

The Royal Navy equivalent to our Lucky Bag is the "scran bag," which was originally a bag in which waste bread and biscuits were collected. A book written by a Royal Navy officer back in 1930 tells of British sailors being fined one inch of soap for redemption of each article found in the "scran bag."

In the U.S. Navy today, the Lucky Bag may not be a bag at all, but rather a small compartment or locker where the master-at-arms stows articles of clothing or bedding which have been found in the living compartments.



selected for appointment in the unrestricted line (1310). Of this number, 263 (48 per cent) had less than a baccalaureate.

Must I be a qualified OOD underway to be selected for augmentation in the unrestricted line (1100)?—An officer who requests appointment with this designator, who has less than two years of active duty, is not required to have had a tour of sea duty and need not be a qualified OOD underway. Individuals who are serving ashore or overseas and who plan to request augmentation are encouraged to request assignment to a sea billet after serving 12 months at their present station. As a matter of policy, officers selected for appointment in this category, who have not had a sea duty assignment, are reassigned to a sea billet shortly after selection. This is to provide the officers concerned with an early opportunity to gain qualifications already possessed by their Regular Navy contemporaries.

What are the opportunities for selection?—The actual numbers considered and selected for augmentation during fiscal year 1960 are as follows:

Designator	Considered	Selected	Percent
1100	409	229	56
1310	1207	549	46
1350	345	178	52
1620	25	12	48
2300	22	2	9
3100	179	113	63
4100	44	17	39
5100	39	26	67
TOTAL	2377	1210	51

Is the opportunity for selection better at one session of the selection board than another?—No. The criteria used by the board are standard.

When does the selection board meet?—As already stated, the board meets quarterly. The date of receipt of an application determines which session of the board will consider it. The schedule for the remainder of fiscal year 1961 is as follows:

Date of Board	Application Cut-off Date
7 Feb 1961	9 Jan 1961
16 May 1961	17 Apr 1961

The four weeks between the cut-off and convening dates are required to complete the processing of applications, to draw the service records and to prepare the lists required by the selection board.

If you intend to apply for the program, you'll first want to consult BuPers Inst. 1120.12H. It contains all the details of the program and also tells you how to apply.

Top Chiefs Will Now Wear Stars on Their Collars

From now on, admirals will not be the only Navymen to wear stars on their collars. The Secretary of the Navy has approved new collar devices for senior and master chief petty officers which will have one and two stars attached.



The one-piece collar device for E-8s will be a foul anchor with one silver star directly above the anchor stock, and for E-9s, two silver stars arranged horizontally above the anchor stock. E-7 personnel, as in the past, will continue to wear the anchor insignia without stars. These new CPO collar devices will be worn in the same position on the collar as before (see accompanying illustration).

At the same time the Secretary of the Navy approved this uniform change, he also made some others.

Name tags may now be worn on the uniform, at the discretion of the commanding officer, on such occasions as conferences, seminars and other similar gatherings, or in the performance of duties, if some easy method of identification by name is desirable or beneficial to a command's mission.

In another amendment to *Uniform Regulations*, enlisted men below chief petty officer who are assigned to Fleet Training Groups (for example, FLTRAGRU San Diego) or Photo Triangulation Groups (for example, PHOTOTRIGRULANT) may now wear unit identification marks on their uniform.

Provisions of Student Loan Program Explained for Men Leaving Active Service

If you're planning to go to college after leaving the Navy, and would like to know if you qualify for the National Defense Student Loan Program, read on. Here are some facts you should know.

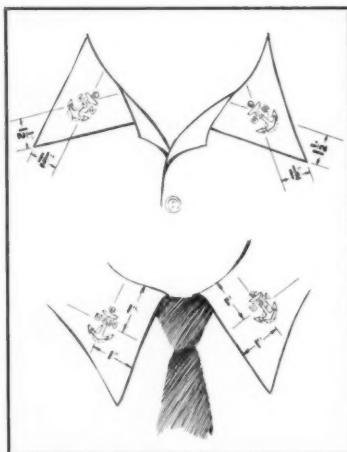
First and foremost, let's clear up what appears to be the most widespread misconception about the NDSLP. It is *not* in any shape or form a peacetime extension of G.I. Bill benefits, nor is it a "right" available to all veterans—veterans per se are not entitled to its benefits based solely on their military service.

What is the National Defense Student Loan Program? It is one of ten major sections of the National Defense Education Act—an Act designed to "strengthen the national defense and to encourage and assist in the expansion and improvement of educational programs to meet critical national needs."

The aim of the NDSLP is, simply, to make sure that no student of ability is denied a college education because of financial need. To this end its energies are directed toward encouraging and assisting colleges and universities in establishing funds for low-interest loans to such students.

To be eligible for such a loan, you must first of all *be actually in need of assistance*. You must be either accepted for or in full-time attendance at a school, and be capable of maintaining good grades in your chosen field of study.

Loans are available both for work toward a bachelor's degree and for more advanced graduate study. Special consideration is granted to persons of superior academic back-



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HANDS

ground who express a desire to teach in elementary or secondary schools after completion of their education, and to those who exhibit special capacities in science, mathematics, engineering or a modern foreign language.

The colleges and universities themselves arrange all loans—a prospective borrower must apply directly to the financial aid office of the school he wishes to attend. Depending upon his degree of need a student can receive up to \$1000 a year, and not more than \$5000 for an entire period of schooling.

Repayments of the loan, plus interest, begin one year after full-time study ends. A student may select any one of several repayment plans, over a period of not more than 10 years. Up to 50 per cent of the total loan and interest may be cancelled if the student enters public elementary or secondary teaching on a full-time basis after graduation.

A student has complete freedom of choice in selection of a course of study, but, as we mentioned earlier, special consideration is given to those who wish to study in specified areas. Thus you would no doubt receive more careful consideration of your application for a loan if you intended to major in Meteorology, for example, than if your planned course of study was to be in, say, History or English.

Only limitation applied to these loans is that the money must be used for "college-related" expenses—tuition, books, instructional materials and equipment, room and board, transportation and lunches, and the like.

Currently there are some 1400 colleges and universities throughout the U. S. participating in the program. During the 1960-61 school year, upwards of 150,000 students in varying degrees of need of financial assistance will receive approximately \$75 million in loans through the NDSLSP.

You may obtain more complete information about the program by writing to the Student Loan Section, Office of Education, Washington, 25, D. C., or, better still, directly to the financial aid office of the college you would like to attend.

The college can give you the better information since each one has its own particular program.

WHAT'S IN A NAME

USS Shark, No. VI

Earlier this year Shark slid into the water at Newport News, Va. This Shark, SS(N) 591, like the marine animal by the same name, can be a killer.

This nuclear-powered submarine, which is already undergoing builder's trials, was launched on 16 Apr 1960 and is scheduled to be commissioned in January 1961. She is the sixth U.S. Navy ship to bear the name.

The first Shark was a 198-ton schooner of 12 guns. She was launched on 17 May 1821—commissioning date is not known—and was ready for sea in June. During her lifetime she made several cruises to Africa and to the West Indies to suppress slave trade and piracy.

In 1839 Shark moved to the Pacific and spent about five years operating along the coast of Peru to protect American interests during civil disturbances in that country. In 1846 she explored parts of the Columbia River in the Oregon Territory and was wrecked while attempting to pass from that river into the ocean.

The second Shark (SS 8) was launched on 19 Oct 1901 at Elizabethport, N. J., and commissioned on 19 Sep 1903. She was used as a training ship for midshipmen at the Naval Academy before being placed out of commission on 21 Apr 1908. At that time Shark was disassembled and carried on board Caesar (AC 6) to the Philippine Islands. She was then reassembled and re-commissioned at Cavite on 14 Aug 1908. Shark was later redesignated as the A-7 on 17 Nov 1911. She patrolled in Manila Bay and off Corregidor Island during World War I, and was finally decommissioned on 12 Dec 1919. She met her end as a target ship.

Shark Number Three was a 74-foot motor patrol craft (S.P. 534) which was acquired by the Navy on 17 May 1917. Her entire career was spent patrolling ocean approaches to Boston Harbor and along the coast as far as Rockland, Me. She was decommissioned on 19 Jan 1919.

Groton, Conn., was the birthplace of the fourth Shark (SS 174), which was commissioned on 25 Jan 1936.

This Shark was assigned to the Pacific and spent two years as a unit of Submarine Division 13, Submarine Force, U.S. Fleet. On 7 Dec 1941 Shark was at the Naval Base of Cavite in the Philippine Islands. She evacuated Admiral Thomas C. Hart, Commander in Chief of the Asiatic Fleet, to the Dutch Submarine Base of Soerabaja in Java.

While operating in the area of Banka Passage on 7 Feb 1942, Shark reported that she was chasing an enemy cargo ship headed northwest. This was the last message or contact with Shark. She was given up for lost on 7 Mar 1942. Records still do not reveal the cause or date of her loss.

The fifth Shark (SS 314) was also launched at Groton, Conn., and served gallantly.

After sea trials, Shark headed for the Pacific in March 1944. She made her first kill in the vicinity of Midway on 2 Jun 1944 when she sank the 4700-ton enemy tanker Chiyo Maru. After evading a string of 39 enemy depth charges, she began to track another heavily escorted convoy on the afternoon of 4 Jun 1944. While maneuvering for attack on this convoy, however, she encountered a patrolling destroyer dead ahead. Shark was not able to get into position for a "down the throat" shot at the DD, but passed 180 yards to the port side of this enemy and scored four torpedo hits on the 6886-ton Katsukawa Maru which sent it to the bottom.

Shark evaded more than 50 depth charges this time, and then surfaced to continue the chase. She caught up with the fleeing convoy the next afternoon, and that night let go a stream of six torpedoes which sent the 3080-ton freighter Tamahime Maru and the 7006-ton passenger-cargo ship Takaoka Maru to the bottom. An enemy destroyer came down Shark's torpedo tracks and began a depth charge attack. The last four of more than 60 underwater explosions straddled Shark and damaged her port shaft. About midnight she surfaced but was unable to catch the convoy.

Shark was lost during her third war patrol, probably in the vicinity of Luzon Strait on 24 Oct 1944. After being outdistanced by a fast convoy on 22 October, she flashed a message to USS Seadragon (SS 194) on the 24th which said she was closing on an enemy freighter. This was the last message received. She was presumed to be the victim of a Japanese destroyer.

The tradition of service to the nation in war and peace serves as inspiration to Shark No. 6, which will join the other nuclear subs with the fleet early this year.



DIRECTIVES IN BRIEF

This listing is intended to serve only for general information and as an index of current Alnavs and NavActs as well as current BuPers Instructions, BuPers Notices, and SecNav Instructions that apply to most ships and stations. Many instructions and notices are not of general interest and hence will not be carried in this section. Since BuPers Notices are arranged according to their group number and have no consecutive number within the group, their date of issue is included also for identification purposes. Personnel interested in specific directives should consult Alnavs, NavActs, Instructions and Notices for complete details before taking action.

Alnavs apply to all Navy and Marine Corps commands; NavActs apply to all Navy commands; BuPers Instructions and Notices apply to all ships and stations.

Alnavs

No. 38—Stated that, owing to insufficient funds, all shore-to-shore rotation in the continental United States, with certain exceptions, will be suspended for the remainder of fiscal year 1961.

No. 39—Stated Alnav 38 is not applicable to the U. S. Marine Corps.

No. 40—Announced approval by the President of the report of a selection board which recommended line officers on active duty to the grade of commander.

No. 41—Announced the convening of selection boards to recommend staff corps officers on active duty (except TARs) for temporary promotion to lieutenant commander and lieutenant.

No. 42—Required that certain serums be suspended from issue and use.

No. 43—Discussed the reduction of numbers of dependents in overseas areas.

No. 44—Expressed hope that return of dependents from overseas can, in large measure, be accomplished by normal tour terminations, by the return of some sponsors before completion of normal tours, and by curtailment of dependents proceeding overseas.

Instructions

No. 1210.7A—Outlines the general policies and procedures to be followed in providing special training and indoctrination for USN line officers, Code 1310, who have been assigned to the 1100 Code designator category.

No. 1301.33A—Discusses procedures concerning the assignment and

rotation of officers in the grades of LTJG and ENS (men, Code 11XX and 6XXX, surface line).

No. 1306.71A—Announces the policy for use of military personnel in Navy commissary stores.

No. 1510.86A—Presents the procedure whereby qualified nonrated personnel from the operating forces may request assignment to certain Class "A" schools.

No. 1520.43B—Publishes information concerning the General Line Course.

No. 1520.48C—Discusses revised information concerning the college training program for eligible augmented and integrated USN commissioned line officers.

No. 1520.61—Publishes information concerning applications from USN and USNR line officers on active duty, and from Naval Academy and Regular NROTC midshipmen, for Submarine School classes.

No. 1710.1F—Establishes basic policies and procedures governing the conduct of All-Navy and Inter-service Sports Championships.

No. 4631.7—Announces procedures to be followed by the naval establishment when using the transportation facilities of MATS.

Notices

No. 1306 (31 October)—Announced new normal shore tour lengths for certain rates.

No. 1210 (10 November)—Invited applications from permanently commissioned USN line officers who are interested in transferring to the Supply Corps.

No. 1430 (10 November)—Announced the advancement of personnel to senior chief petty officer and master chief petty officer.

No. 1910 (16 November)—Em-

phasized the continuing need for furnishing enlisted men to be released from active duty, who have a remaining Reserve obligation, with accurate information as to their participation in the Naval Reserve program.

No. 1418 (17 November)—Announced the schedule for Navy-wide examinations for enlisted personnel to be held in February 1961.

No. 1520 (18 November)—Announced the selection of officers for the Submarine School classes convening 3 January and 4 Apr 1961 at the Submarine School, New London, Conn.

No. 1700 (18 November)—Announced the Sixth All-Navy comic cartoon contest.

No. 1510 (21 November)—Announced an advance change to the *Enlisted Transfer Manual* (NavPers 15909) made necessary by Alnav 31.

Changes to Group IX Ratings of AD, AM and AB Go Into Effect This Month

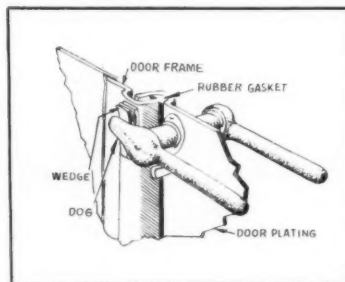
The Chief of Naval Personnel has announced sweeping changes to the Aviation Machinist's Mate (AD), Aviation Structural Mechanic (AM) and Aviation Boatswain's Mate (AB) rating structures. These changes became effective 1 Jan 1961.

Under the revised structures, these ratings are now set up as follows:

Rating	Appropriate Pay Grades
AD	E-8, E-9
ADJ (Jet Engine Mechanic)	E-7 and below
ADR (Reciprocating Engine Mechanic)	E-7 and below
AM	E-8, E-9
AME (Safety Equipment)	E-7 and below
AMS (Structures)	E-7 and below
AMH (Hydraulics)	E-7 and below
AB	E-8, E-9
ABE (Launching and Recovery Equipment)	E-7 and below
ABF (Fuels)	E-7 and below
ABH (Aircraft Handling)	E-7 and below

These revised structures apply to both regular Navy and Naval Reserve EMs. The ADJ, ADR, AME, AMS and AMH service ratings are identical to those which have previously existed in certain lower pay grades. The ABF service rating is primarily concerned with aviation fuel systems, the ABE with aircraft catapults, arresting gear and associated equipment, and the ABH with shipboard and flight line aircraft ground handling, including seaplane handling

Grains of Salt—



W. T. DOOR

operations. Change 15 to the *Manual of Qualifications for Advancement in Rating* (NavPers 18068) contains revised qualifications for these new rating structures.

COs have been authorized and directed to change ratings in equal pay grade of all petty officers and strikers on active duty, including Naval Reserve and Fleet Reserve personnel on active duty, as shown in the following tables:

Aviation Machinist's Mate (AD)

Pay Grades	From	To
E-8, E-9	AD	No change
E-8, E-9	ADR, ADJ or ADP	AD
E-7 and below	AD	ADR or ADJ
E-7 and below	ADR or ADJ	No change
E-7 and below	ADP	ADR

Aviation Structural Mechanic (AM)

E-8, E-9	AM	No change
E-7 and below	AM	AMS, AMH or AME
E-7 and below	AMS, AMH or AME	No change

Aviation Boatswain's Mate (AB)

E-8, E-9	AB	No change
E-8, E-9	ABU, ABG or ABA	AB
E-7 and below	AB	ABF, ABH or ABE
E-7 and below	ABU	ABH or ABE
E-7 and below	ABG	ABF
E-7 and below	ABA	ABH

In some instances, as shown by the above tables, COs have been authorized to change an individual to one of two or more service ratings. The choice, in each case, has been left to the discretion of the CO.

Trainee NECs for ABE, ABF and ABH are contained in Change Three to the *Manual of Navy Enlisted Classifications* (NavPers 15105B). Upon receipt of this change, those individuals holding trainee codes 7010 ABU, 7020 ABG and 7030 ABA should be changed to the new trainee codes established for ABH or ABE, ABF and ABH, respectively. Personnel coded 6450 ADP should be changed to 6420 ADR.

The Navy-wide examinations for advancement in rating in February 1961 will correspond to the new rating structure. *Training Publications for Advancement in Rating* (NavPers 10052-H or subsequent revision) lists the mandatory training courses and optional study material for these ratings. Navy-men who are candidates for ad-

ANSWERS TO QUIZ AWEIGH

1. (b) U. S. Pistol, Caliber .45 M1911A1.
2. (a) 50 yards.
3. (c) Turrets.
4. (a) Salvo. Technically it's a "six-gun salvo, automatic control." It could be part of a full broadside, but there is no evidence in this drawing that the ships' other main battery guns are firing.)
5. (b) 3-inch.

vancement in the ratings discussed in this article must continue to complete the mandatory training courses for the applicable pay grades as listed in NavPers 10052-H even though some of the courses cover the broad general rating rather than just the new service rating. This is required because the Navy wants a candidate to be familiar with the responsibilities of related service ratings even though he is examined for advancement to pay grades E-7 and below only in his own service rating. Candidates for E-8 and E-9 will be given examinations covering all service ratings included within the general rating for which they are competing.

In the new paths of advancement created by these changes, ADJANs and ADRANs will advance to ADJC and ADRC respectively. Then both will compete for ADCS and ADCM. Similarly, AMEANs, AMSANs and AMHANs will advance to AMEC, AMSC and AMHC, then all will compete for AMCS and AMCM. And ABHANs, ABFANs and ABEANs will advance to ABHC, ABFC and ABEC, then compete for ABCS and ABCM.

Course at San Diego Provides Training for PAMI Personnel On Shorvey, Seavey, Osvey

Pacific Fleet PAMI (Personnel Accounting Machine Installation) thinks it has devised a system that will help to provide it with more complete information from its con-

tributing ships and stations. It's a matter of telling the Navymen who prepare the reports just what is needed and why.

In March 1960, a five-day Diary Preparation and Orientation Course was started in San Diego. At this school, PAMI personnel instruct Navymen who actually prepare or who directly supervise the preparation of the personnel diary. Students are obtained by inviting all PacFLT ships and stations to submit the names of officers and enlisted men who wish to attend.

During the five-day school, students learn about:

- Identification and reporting of personnel data used in the Naval Manpower Information System, and the use of the data in assigning officer and enlisted personnel to new duty stations.
- Accounting procedures by electronic data processing machines.
- Rules for personnel diary preparation.
- Seavey/Shorvey Osvey (Overseas Survey) procedures.
- The Officer Distribution Control Report (ODCR).
- Project PayMate (use of the enlisted personnel diary in lieu of certain pay order vouchers).

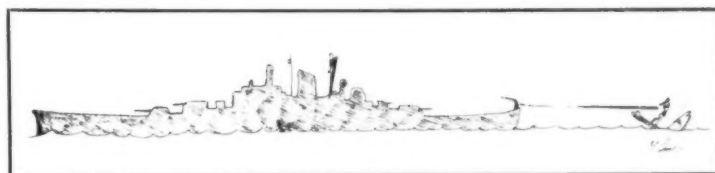
Besides learning about these subjects, students are reminded of the importance of updating the records when the status of personnel changes.

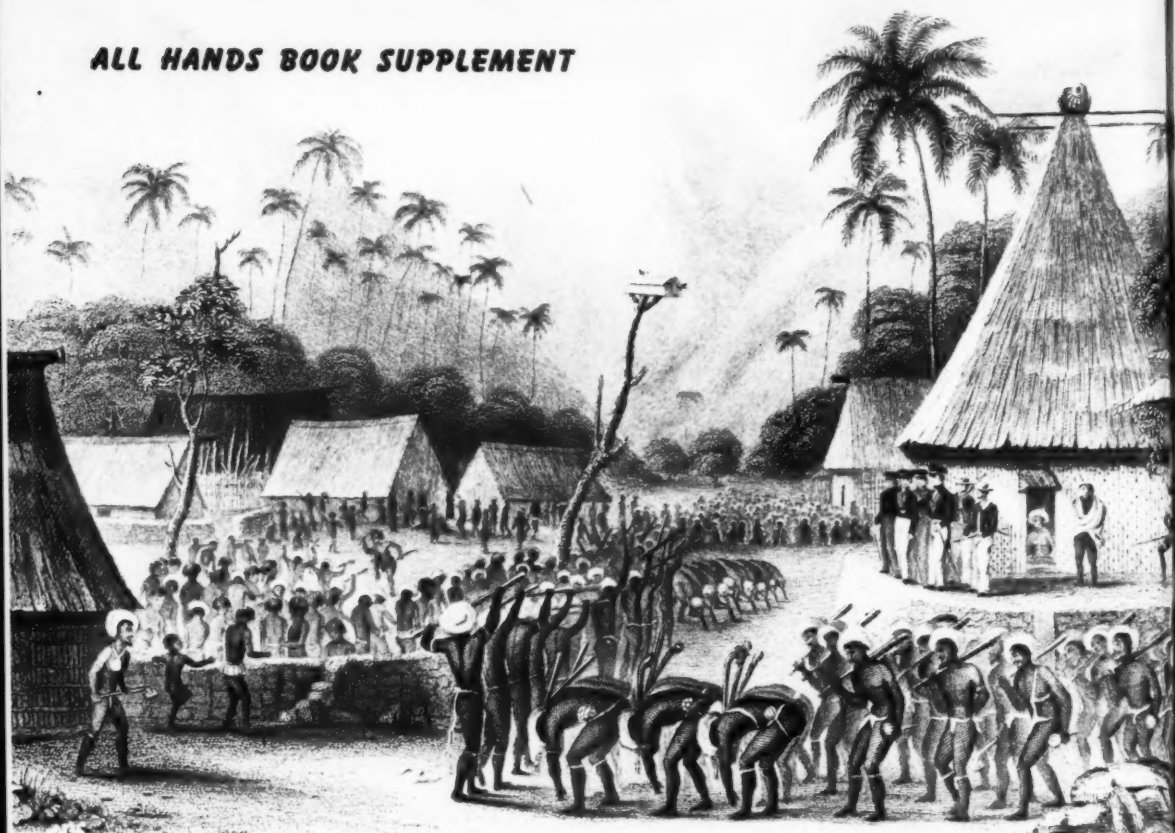
For instance, such factors as advancement in rate, duty assignment, schooling, marriage, health or proficiency in rating, all add to distribution data and affect assignments of personnel.

After nearly a year of operation, about the only undesirable feature of the Diary Preparation and Orientation Course is the inability to meet the demand for quotas. PAMIPACFLT has found it necessary to schedule special classes in addition to the normal ones which are filled months in advance.

All-Navy Cartoon

J. E. Linneball, YN5N, USN





SOUTH SEAS ADVENTURE: 1838

It's easy to forget that much of the knowledge we now take for granted has been laboriously and painfully accumulated over the years—often at great physical risk and, at times, at a considerable cost in lives. The following account of one phase of LT (later RADM) Charles Wilkes' five-year exploring expedition (1838-42) tells how we first learned details of the Fiji Islands.

After the expedition's sojourn in Antarctica (see April 1954 ALL HANDS, pp. 59-63), Wilkes' three ships, Vincennes, Porpoise and Peacock, stopped briefly at New Zealand and then began to survey the Fiji Islands. At the beginning of the episodes quoted below, Wilkes is intent upon establishing a treaty with one of the local chiefs which will enable the explorers to establish an observatory on one of the islands, and which will provide some form of protection to the missionaries already established.

The incidents, excerpted and freely arranged, are based upon LT Wilkes' five-volume report of the historic expedition, entitled the Narrative of the United States Exploring Expedition, 1838-1842, by Charles Wilkes, USN.

THROUGH THE INTERPRETER I talked to the FeeJee king of the necessity of protecting the travelers, and of punishing those who molest and take from them their goods in case of shipwreck. He listened to me very patiently, and said he had always done so; that my advice was very good, but he did not need it. He added that I must give plenty of it to his son Seru, and talk hard to

him; he would in a short time be king, and needed it.

We proceeded to show them the ship. When Tanoa expressed great astonishment at the manner of steering our large canoe, I told him I was going to order some guns to be fired in his honor.

It was amusing to see the curiosity excited among them all, when they understood the large guns were to be fired. When the firing took place, they all made an exclamation of surprise and astonishment—followed with a cluck of the tongue in a high key, putting their fingers to the mouth, and patting it after the fashion of children, or one of our own Indians in giving the war-whoop.

Tanoa would not at first look at the ball flying along and throwing up the water. When the second was fired, he uttered the same marks of surprise as the rest; and after the third, he begged that no more should be fired, as he was amply satisfied with the honor, and the noise almost distracted him.

SUITABLE PRESENTS were now distributed to Tanoa and his suite. They included shawls, axes, accordions, plane-irons, whales' teeth, and a variety of other articles, among which were a box of Windsor soap, tobacco, a musket and watch and chain. These were received with clapping of hands, their mode of returning thanks.

It was my intention to have had a feast of rice-bread and molasses on board, but there were so many guests I

decided to hold the celebration ashore. The Marines were put through their exercises, marched and counter-marched to the music of the drum and fife, which delighted my visitors extremely. After being three hours on board, hearing that the provisions for the feast had been sent on shore, they desired to depart, and were again landed.

THE MISSIONARIES have made slow advancement in their work, and there is but little to be expected as long as the people remain under their present chiefs. The old chiefs, in particular, would often remark that they were too old to change their present dieties for new ones, or to abandon what they considered their duty to their people; yet the chiefs generally desired the residence of missionaries among them. I was anxious to know why they entertained such a wish, when they had no desire for instruction. They acknowledged that it was to get presents, and because it would bring vessels to their place, which would give them opportunities to obtain many desirable articles.

The presents from the missionaries are small; but an axe, or hatchet, or other articles of iron, are irresistible. The chiefs say they are perfectly willing that the missionaries should worship their own Spirit, but they do not allow any of the natives to become proselytes. None are made without their sanction, under fear of death.

Under these circumstances it is not to be supposed that the success of the missionaries will compensate for the hardships, deprivations, and struggles which they and their families must encounter. Nothing but a deep sense of duty could induce civilized persons to subject themselves to such hardships.

THE FOLLOWING DAY I endeavored to get the chiefs on board to sign the treaty. I invited them on board; but nothing could persuade them to place themselves in our power, for fear of detention. Finding that they were determined in their refusal to come on board, I asked that a council of chiefs be held on shore.

To this the king agreed, and issued his orders for the meeting. It took place in his house, which is built much after the fashion of an *mbure* (small building of worship) though of larger dimensions; it had four apertures for doors; the fire-place was in one corner, and part of the house was curtained off with *tapa*. A large number of junk-bottles were hung from a beam, both for use and to display his wealth, for they are very much valued.

The king also possessed a chair, two chests, and several muskets. The former he seemed to take much pleasure in sitting in, having discovered, as he told the interpreter, that it was very comfortable for an old man.

We had a full meeting, and I was much struck with the number of fine-looking men who were present. Their complexions were dark, and they resembled each other more closely than any natives I had before seen.

The two sons of the king were present. Tui Illa-illa, who is the actual king, is held much in awe by the people. The regulations, after a full explanation of their objects, were signed by the council as they made their mark, for the first time, on paper. The old king has always been friendly to the whites, but his son is considered quite unfriendly toward them; and the missionaries feel that, were it not for the old man, and the fear of a man-of-war, they would not be safe.

BESIDES THE VESSELS of the squadron, which were underway for a considerable part of the time, 17 boats were actively engaged in the surveys. Even the amount of work performed will give but little idea how arduous the duties were. The boats were absent from the vessels from 15 to 20 days at a time, during which the officers and men rarely landed, and were continually in danger from natives who were upon the watch for an opportunity to cut them off.

In cases where error or careless work was suspected, the doubtful parts were resurveyed, correcting any mistake which might have been committed in the first place and verifying the survey where it was accurate.

The opportunities of the naturalists were as great as could be afforded them consistent with their safety. It was considered desirable that the interior of the large islands should be reached; this was partly effected up one large river by Lieutenant Budd. But journeys on foot into the interior were out of the question, and only those parts of the islands in the immediate vicinity of the seashore could be visited with safety.

THE CLIMATE of the Feejee Islands is well adapted to all the various tribes of tropical plants and many of those of the temperate zone; for many of the islands are of a mountainous character.

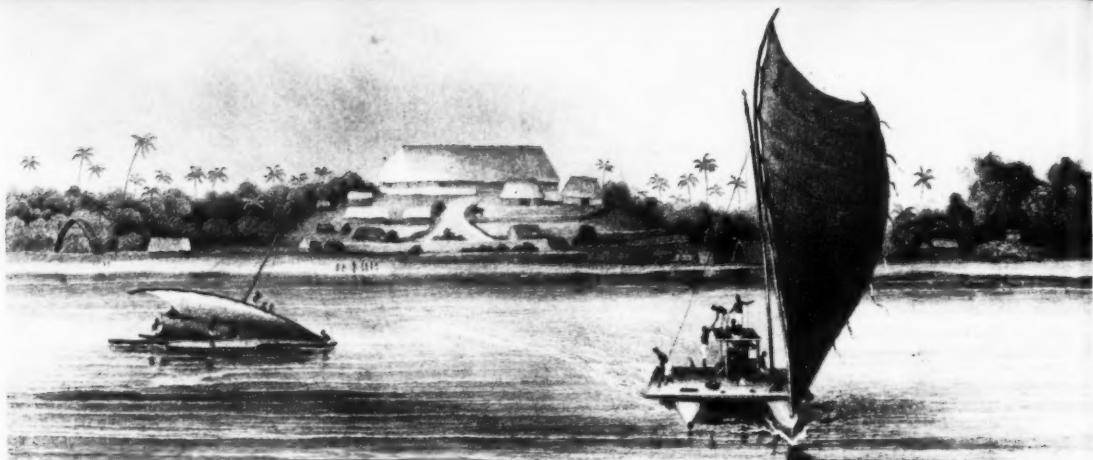
These islands were once covered with vegetation from the coral reefs to the top of their highest peaks, but below the elevation of 1000 feet on the leeward side of the large islands, the original vegetation has been for the most part destroyed by the fires which the natives use to clear their planting grounds.

During our sojourn we occasionally saw the fire running over vast fields. The forest above this elevation, having escaped its ravages, forms vast shady masses. As the ridges and summits are approached the trees become more sparse, giving an opportunity to the numerous species of ferns to receive both light and air. Climbing plants are numerous, but are found mostly around the margin of cultivated patches and the banks of rivulets.

Our botanists were extremely industrious in collecting in this new and prolific field. The list of the plants



SOUTH SEA SURVEYOR—After his Antarctic visit LT Charles Wilkes led his expedition to chart Fiji Islands.



STOPOVER—LT Wilkes held a conference with Fiji chieftains in their village to sign a peace treaty with them.

gathered amounts to about 650 species and they are of the opinion that many more remain which, at some future day, it may fall to the lot of other botanists to collect. This, however, cannot happen until the islands are more civilized, and there is some safety in wandering into the mountain regions, which is now attended with much danger.

CONNECTED WITH THE SEASONS is a singular ceremony called "Tambo Nalanga," which takes place in November and lasts four days. At the commencement, the most influential landholder goes, just at sunset, outside the town and invokes in a loud voice, the spirit of the sky for his blessing and good crops; after which a general beating of sticks and drums and blowing of conches takes place for half an hour.

During this festival every one remains shut up, without labor, and so strictly is it kept that not even a leaf is plucked during this period, nor is any work carried on.

The men, during this period live in the *mbure* and feast upon the *balolo*, a curious sort of salt-water worm of a green color which makes its appearance about this time. It is eaten either raw or cooked, as suits their fancy.

At daylight, on the expiration of the four days (or rather nights, for they count by nights instead of days), the whole town is in an uproar, both men and boys scampering about, knocking at the houses with clubs and sticks, crying out "Sinariba," after which the ordinary routine takes place. I was told that this ceremony takes place only in one particular district.

THE ARMS OF THE FEEJEEES consist of spears, clubs, bows and arrows. The spears are of various lengths, from 10 to 15 feet. They are made of coconut wood and are used at times with great dexterity. Some parts of them are wound round with sennit. They are pointed and the end charred. I have seldom observed any that had any other pointing to them, although sharp bone is sometimes used. These spears are called *motu*.

They have several kinds of clubs, made from iron-wood. That which they prize most for their fights is called *maloma*. The larger end of this is generally the part of the tree next the root. It is about three and one half feet long and very heavy. They frequently have a variety of figures carved upon it.

The second kind of long club is peculiar to the chief and is called *airou*. It is somewhat shovel shaped and equally heavy, and with it they can cleave a man down.

The *toka* is the name of another club, of a somewhat peculiar shape, being bent near the extremity, and having a large knob full of small points, with a single larger point projecting from it. This appears to be more for show than use.

The *nla* is a short club used as a missile; it is about 18 inches long, the handle is small and at the end is a natural knot. The size of the end is as large as an 18-pound ball. Our sailors gave this the name of Handy Billy, and it is almost incredible with what accuracy and force the natives can throw this weapon.

THE FEEJEE CANOES are superior to those of the other islands. They are generally built double and those of the largest size are as much as 100 feet in length. The two parts of which the double canoe is composed are of different sizes and are united by beams on which a platform is laid. The platform is about 15 feet wide, and extends two or three feet beyond the sides.

The smaller of the canoes serves as an outrigger to the larger. The bottom of each of the canoes is of a single plank, the sides fitted to them by dovetailing and closely united by lashings passed through flanges left on each of the pieces. The joints are closed by the gum of the breadfruit tree, which is also used for spearing them over.

The canoes have generally a depth of hold of about seven feet, and the two ends, for a length of about 20 feet, are decked over to prevent the canoes from shipping seas. Amidships they generally have a small thatched house to protect the crew from the weather, above which is a staging on which there is space for several people to sit. The frames of the canoes which belong to chiefs are much ornamented with shells.

The sails are so large as to appear out of all proportion to the vessel, and are made of tough yet pliable mats. The mast is about half the length of the canoe, and the yard and boom are usually twice as long as the mast. The mast is stepped on deck in a chock.

THE NATIVES ARE VERY EXPERT in managing these vessels, and it requires no small skill in beating against the wind to do so. In sailing the canoe, it is always necessary that the outrigger should be toward the weather

side and the mode of tacking is performed by putting the helm up instead of down. When the wind is thus brought aft, the tack of the sail is carried to the other end of the canoe, which now becomes the bow, and the course on the other tack is then pursued.

If the outrigger gets to leeward while the canoe is under sail, some accident always happens, for no kind of vessel is so easily overturned. Yet, when they are properly managed, they will carry sail when it blows heavily and still preserve an almost upright position. This is effected by the natives going out on the outrigger and thus counterbalancing the force of the wind by their weight.

The canoes are built of hollowed-out logs and show a great deal of ingenuity. They are capable of making long voyages.

The only food they provide themselves with for sea is said to be yams. They use coconut shells to preserve their water in and, with a fire and ava-bowl, are equipped for sea.

It is the custom for the chief always to hold the end of the sheet; thus it is his task to prevent the danger of upsetting. They steer with an oar having a large blade. In smooth water these canoes sail with great swiftness, but from the weight and force of the sail they are much strained, leaking at times very badly, requiring always one and sometimes two men to be constantly bailing out water. Nevertheless, they make very long voyages—to Tonga, Rotuma, and the Samoan Islands.

The planks are brought into and kept in shape by small ribs, almost exactly as in our mode of boat building.

WHEN A CHIEF requires a house or a canoe to be built, he applies to the head carpenter, whose title is *rokola*, and whose office is hereditary. He is a person of great consequence and the workmen constitute a caste which is hereditary also. The chief gives the *rokola* a whale's tooth as a fee and pays him for the work, not even feeding the workmen who are paid by the *rokola* and provide themselves with food. With great exertion, a canoe may be built in three or four months, but it usually takes as many years.

The principal tool of the carpenters is an adze which, since the introduction of foreign tools, they make by lashing a plane-iron to a crooked hole, with sennit. They also now use the chisel and knife. For boring holes, they use the long spine of the echina, bones and, of late, nails. Carving is performed by the teeth of small animals (rats and mice) set in hard wood, much as diamonds are set for glaziers' purposes. Their patience, industry and perseverance in their occupations are great, and the workmanship excellent, when the imperfection of their tools is considered.

They are aware of the superior qualities of our tools and are anxious to possess them. They prize most the hatchet, which comes nearer in shape to their own instrument than any other. Their knives are made of the outside of a piece of bamboo, which is cut down for the purpose and put into the proper form while green. After it has dried for a time it is charred, which makes it very hard and sharp. It may be fitted for surgical operations by charring it a second time, and grinding it down on a smooth stone.

THE USE OF POTTERY is the cause of a difference between their mode of cooking and that of the other

Polynesian islands. While the latter bake by means of ovens heated by red-hot stones, the FeeJees cook almost wholly by steam. Their pots or jars for cooking will contain from five to 10 gallons. They are set on the fire obliquely.

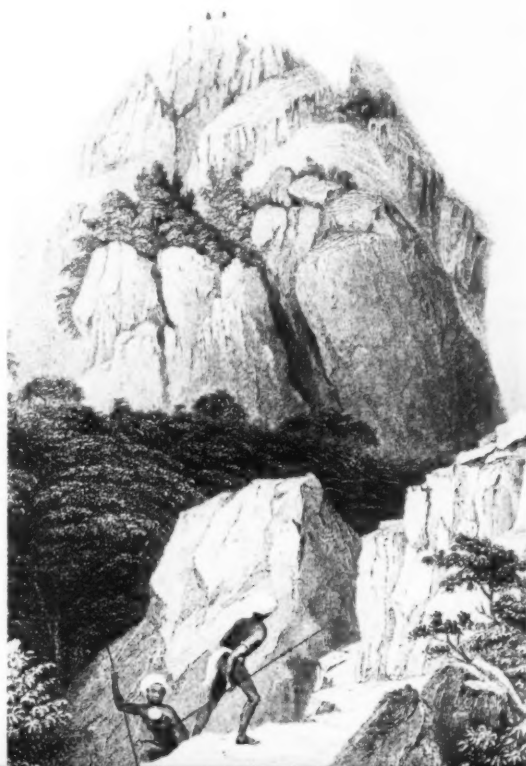
When these jars are employed in cooking, they use little water, and stuff the neck of the jar full of banana leaves, which allow the steam to escape but slowly. This is the most common way of preparing food.

They have many other kinds of earthen vessels which they use for various purposes, and which are of various patterns. Their drinking vessels have usually three small holes at one end, similar to the eyes of a coconut. They never put the vessel to the mouth, considering it quite objectionable for several persons to drink out of the same vessel with their mouths to it. To avoid this, they hold the vessel eight or 10 inches above their heads and allow the water to run into their mouths as if from a spout, throwing the head back for that purpose.

I one day asked an old chief if he could believe that the world was round. After hesitating some time, he said yes, it might be true for the sun and sometimes the moon was round but he thought the FeeJee country was flat and not like other parts. They could seldom be induced to look at the globes that were hanging up in my cabin and invariably turned away from them when the FeeJee Islands were pointed out.

Presentation of the data collected by Wilkes and his collaborators gives no indication of the handicaps under which the group worked. Extreme tact and firmness were constantly required. Lack of understanding of the expedi-

ON HIGH—Navymen of expedition looked over Fiji jungles and villages from Observation Peak (background).



tion's objectives, suspicion of its motives and language barriers combined to make an explosive situation. One result of such mutual misunderstandings is described.

ON THIS PARTICULAR AFTERNOON, I was congratulating myself that I had now finished my last station of the survey and that my meridian distances and latitudes were all complete. We were putting up our instruments to go on board when it was reported to me that the three boats were in sight, coming down before the breeze. So unusual an occurrence at once made me suspect that some accident had occurred, and on the first sight of them I found that their colors were half-mast and union down. I need not describe the dread that came over me.

When they arrived, I learned that a horrid massacre had but a short hour before taken place, and saw the mutilated and bleeding bodies of Lieutenant Joseph A. Underwood and my nephew, Midshipman Wilkes Henry.

On the 22nd of July the first cutter of *Vincennes*, Lieutenant Alden and Midshipman Henry, and *Leopard*, Lieutenant Underwood, left the station at Eld Island, and proceeded along the right side of Waia, to survey the small islands lying north of Malolo. This done, they had instructions to join the tender or *Porpoise* on the western side of that island, and survey such islands as they might find. After passing Waia, the boats anchored for the night under one of the small islands.

On reaching this place, Lieutenant Alden, who wanted to learn if *Porpoise* was at anchorage on the west side, directed Lieutenant Underwood to land near the south end of Malolo, and to ascend a small eminence to get a view of that anchorage. Lieutenant Alden cautioned Lieutenant Underwood to go well armed and to be on his guard with the natives.

Lieutenant Underwood landed and went up the hill with one of his men. After a few minutes, Lieutenant Alden observed some suspicious movements among the natives near the point, and, in consequence, hoisted a signal to recall. Lieutenant Underwood was soon seen returning to the boat with his men and a native.

On joining Lieutenant Alden, he reported that there was no vessel in sight, and mentioned that on his way up the hill, he suddenly came upon a native carrying an armful of clubs who, the moment he saw him, threw down his load and attempted flight, but Lieutenant Underwood made him go before them to the boat. When they

reached the beach, a party of natives joined, and appeared much disconcerted at finding the lad a prisoner and without arms.

THEY PASSED THE NIGHT at anchor in this bay, and on the morning of the 24th, discovered the tender at anchor to the eastward. At nine o'clock Lieutenant Emmons joined them in *Peacock's* first cutter. They hoped to obtain some yams and pigs from him or from the tender.

When Lieutenant Emmons arrived, several of the natives were on the beach where the boats' crews had cooked their breakfast. Many inducements were offered for pigs and yams, with very little success. Each offered some reason why the boats should go to their town for such things.

Just after the men had finished their breakfast, the chief spokesman of the village came, wading out near the boats, and invited them, in the name of the chief, to their town, where he said the chief had secured four large hogs as a present for them.

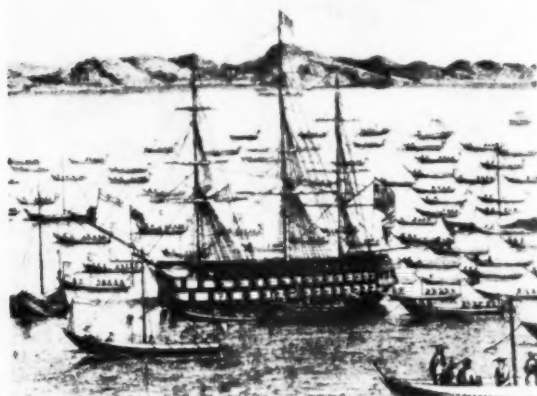
Lieutenant Underwood volunteered to go to the town for provisions, taking with him John Sac (our interpreter from New Zealand). He shoved off, leaving the other boat to follow him as soon as the tide would allow it to cross the reef between the islands.

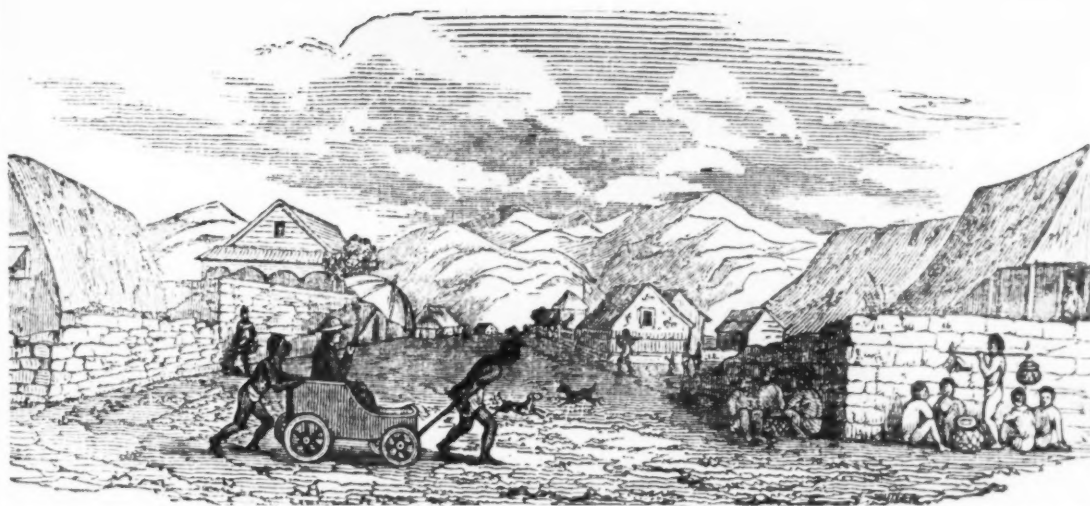
Lieutenant Underwood's boat drew too much water to get across the reef, and grounded. A number of natives collected around her, and joining with the boat's crew, assisted to drag her over the reef. At this time the natives got a knowledge of the feebleness of the armament. Lieutenant Underwood had left the greater part of his arms on board the brig some few days before. Seven rifles had been put on board that vessel, under the idea that it would lighten the boat, and no more than three out of the 10 he took with him from *Vincennes* remained.

On landing they found only two pigs tied to a tree, instead of the four they had been promised. These natives declined selling until the chief, who was out upon the reef fishing, should return. A messenger was sent for him, and he soon made his appearance, but conducted himself haughtily, and refused to part with his hogs except for a musket, powder, and ball. The offer was refused.

Lieutenant Alden entertained some uneasiness at the number of natives that had crowded around *Leopard*. He started to join her, but was detained near the reef about

FOR FIVE YEARS U.S. ships under LT Wilkes explored and visited remote places from Japan (left) to Antarctic (right).





HONOLULU TOO—The South Sea Surveying and Exploring Expedition of 1838-42 found Honolulu looking like this.

20 minutes before the tide would allow their boat to pass.

On entering the bay, he found *Leopard* at anchor about two thousand feet from the shore, in just sufficient water to enable his boat to get alongside. He was informed by the boat's crew that Lieutenant Underwood had gone on shore, leaving a hostage in *Leopard*, whom Lieutenant Alden immediately took into his own boat.

Lieutenant Underwood was now seen on the beach, endeavoring to trade with a party of about 15 natives.

A few moments later, a small canoe came alongside Lieutenant Alden's boat, and exchanged some words with the hostage, who displayed anxiety to return with them to shore. As the canoe shoved off, he attempted to leave the boat but was stopped. Lieutenant Emmons now joined, and *Leopard* was ordered to drop in as near to the party on shore as possible. The tide had by this time risen sufficiently to allow her to go most of the way on the reef. After another half-hour had expired, Jerome Davis, one of the boat's crew, came off with a message from Lieutenant Underwood, that with another hatchet he could purchase all he required.

The hatchet was given to Davis, who was directed to tell Lieutenant Underwood that he should come off as soon as possible with what he had.

While Lieutenant Alden was on the starboard side of the boat, the hostage jumped overboard from the larboard quarter, and waded to the shore, looking over his shoulder to dodge at the flash if fired at. He took a direction different from that of the party on the beach, to divide the attention of those in the boats. Lieutenant Alden immediately levelled his musket at the hostage, who slackened his pace for a moment and then continued to retreat.

Midshipman Clark, who was ready to fire, was directed to fire over the hostage's head, which did not stop him.

(Clark testified that Lieutenant Underwood, M'Kean and himself were standing near the beach, waiting the return of Davis. They saw the escape of the native, who had been discovered carrying the arms and was being held hostage to insure the safety of the shore party. They heard the report of the musket. The old chief, who was standing near, heard it too and immediately cried out that it was his son. He did not know the fire was directed over his

head and did not see the man escape. Calling out that his son had been killed, he ordered the natives to make fight.)

At this point, two of them seized Clark's rifle and tried to take it from him. One of these he stabbed with his sheath-knife; the other Mr. Underwood struck on the head with the butt-end of his pistol, upon which both relinquished their hold. Lieutenant Underwood then ordered the men to keep close together and they endeavored to make their way to the boat, facing the natives. Lieutenant Underwood also called upon Midshipman Henry to assist in covering the retreat of the men to the boats, to which Mr. Henry replied that he had just received a blow from the club of an assailant, and would first have a crack at him.

He then pursued the native a few steps and cut him down with his bowie-knife pistol, and again reached the water's edge when he was struck with a short club on the back of his head, just as he fired his pistol. The blow stunned him and he fell with his face in the water, when he was instantly surrounded by the natives who stripped him.

The natives now rushed out from the mangrove bushes in great numbers, some of them trying to get behind Lieutenant Underwood who, having received a spear wound, fired and ordered the men to do the same. After he had fired his second pistol, he was knocked down by the blow of a club and killed. Clark at the same time was struck and had no further recollection until his rescue.

The task of charting the unexplored and little-known areas of the world, as indicated by the above incident, was fraught with danger. There were others too; however, a temporary truce was made, and the Wilkes expedition continued its work.

Following its sojourn in the Fiji and Hawaiian Islands, the expedition in 1841 went on to explore the west coast of the United States, visiting San Francisco Bay and the Sacramento River.

Crossing the Pacific, it then stopped at the Philippine Islands, the Sulu Archipelago, Borneo, Singapore, Polynesia and the Cape of Good Hope, concluding the four-year voyage in June 1842 at New York.

TAFFRAIL TALK

Included among the duties of the News Desk at ALL HANDS is the responsibility of reading all the ship and station newspapers. When we encounter an issue which shows signs of imagination, we are very happy indeed.

All this is leading up to a tip of the hat to Bill Adams, PN2, of the MCB Six Log, who obviously has given considerable time and thought to his explanation of the workings of Seavey. He makes but a brief attempt to quote directly from the *Transfer Manual*—instead, he tries to describe to his readers just how Seavey affects them and how to go about filling out their rotation data cards.

Perhaps we're getting soft in our old age, but we liked his approach.

★ ★ ★

Of the many Navy newspapers received daily here at ALL HANDS, "The Hoist" is always a frontrunner in lively copy. Published at the Naval Training Center, San Diego, Calif., it is an eight-page, five-column weekly. One recent issue had a couple of items that rate further mention—which they are now getting.

The first item is about three Navy recruits—the Watson triplets, Thomas, Hugh and Craig. They spent a day in Hollywood and had three "official hosts." The hosts had no rank and wore no uniform. Instead they were three teen-age models named Joy, Theresa and Judy. It was a triple pleasure for the Navymen.

The second item is a short one about a CS3 with a long name. Stanley Kaonohiokalanikeapuaahiahikeonikula Kamakea is the man. He is a 100 per cent Hawaiian and his middle name means "star of the morning." It takes two name boards for his identification card photographs.

★ ★ ★

One never knows what one will encounter when one is duty officer, does one?

Consider the slight sense of shock experienced by L. H. Miller, SN, who was on sentry duty with Helicopter Antisubmarine Squadron One, Key West, when he noticed an alligator sauntering up the ramp without so much as a "request-permission-to-come-aboard, sir."

Assistant Squadron Duty Officer A. L. Ellisor, SOC, made his three-foot-long guest welcome in the duty office until he went off watch, then took it home to make a pet of it.

We're not quite sure of the intervening details, but we do know that, shortly thereafter, the Key West Aquarium received an offer of a free alligator.

★ ★ ★

The early arrivals in the Antarctic this year expected, as always, to be greeted by the traditional penguin welcoming committee, but this year many incoming Navymen beat the migrating birds to Antarctica. Instead of penguins, the newcomers were met by bearded members of last year's wintering-over group who were happy to make the cold, bumpy, five-mile trip from camp to the air strip. We think the oldtimers wanted to make sure their reliefs didn't get "cold feet."

The All Hands Staff

The United States Navy

Guardian of our Country

The United States Navy is responsible for maintaining control of the sea and is a ready force on watch at home and overseas, capable of strong action to preserve the peace or of instant offensive action to win in war. It is upon the maintenance of this control that our country's glorious future depends. The United States Navy exists to make it so.

We Serve with Honor

Tradition, valor and victory are the Navy's heritage from the past. To these may be added dedication, discipline and vigilance as the watchwords of the present and future. At home or on distant stations, we serve with pride, confident in the respect of our country, our shipmates, and our families. Our responsibilities sober us; our adversities strengthen us. Service to God and Country is our special privilege. We serve with honor.

The Future of the Navy

The Navy will always employ new weapons, new techniques and greater power to protect and defend the United States on the sea, under the sea, and in the air.

Now and in the future, control of the sea gives the United States her greatest advantage for the maintenance of peace and for victory in war. Mobility, surprise, dispersal and offensive power are the keystones of the new Navy. The roots of the Navy lie in a strong belief in the future, in continued dedication to our tasks, and in reflection on our heritage from the past. Never have our opportunities and our responsibilities been greater.

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• AT RIGHT: WARM UP — Flight platform hands keep warm with jumping jack routine while waiting for copter to return to USS Northampton (CLC 11) during cruise through frigid waters above the Arctic circle.

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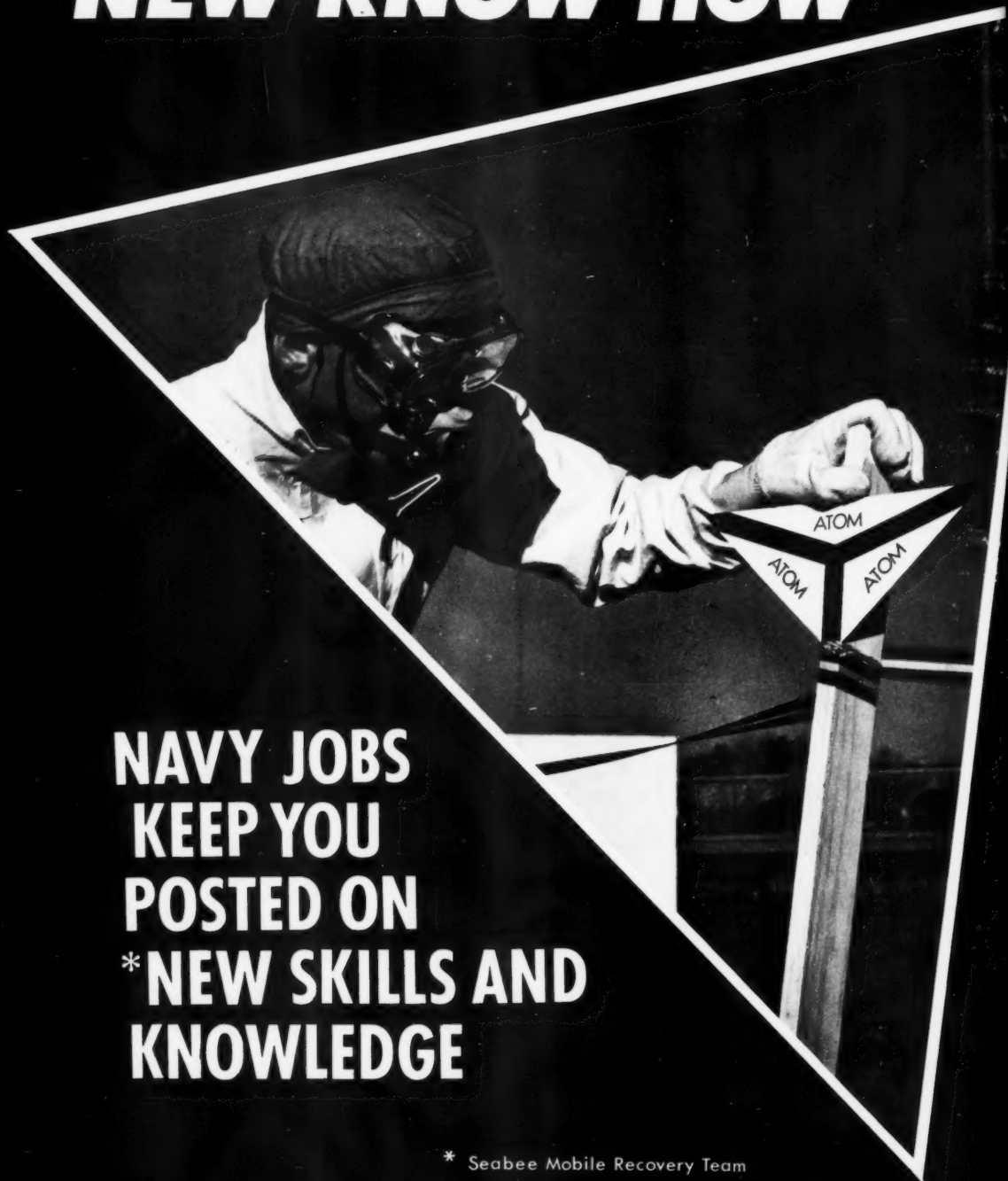
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